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Annual Report

Department of Public Health

CITY OF NEWARK, N. J.

1904.

Annual Report

COMPLIMENTS OF

DAVID D. CHANDLER,

HEALTH OFFICER.

Health

CITY OF NEWARK, N. J.

1904.

Annual Report

Department of Public Health

CITY OF NEWARK, N. J.

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Members of the Board of Health

OF NEWARK, N. J.

9. 27 Issued C. T. Co. League 3/33

DR. H. C. H. HEROLD, PRESIDENT.....	75 Congress Street
DR. C. M. ZEH.....	15 Central Avenue
DR. W. S. DISBROW.....	151 Orchard Street
MR. JOSHUA BRIERLEY.....	99 Lincoln Avenue
MR. C. P. ZIMMERMAN.....	881 South 15th Street
DR. J. T. WRIGHTSON.....	12 Central Avenue
MR. J. W. DOBBINS.....	247 Lake Street
MR. H. C. ROSS.....	96 South 10th Street
MR. L. L. DAVENPORT.....	198 Garside Street
DR. L. E. HOLLISTER.....	138 Clinton Avenue

HEALTH OFFICER.

MR. DAVID D. CHANDLER.....74 North Seventh Street

Standing Committees of the Board of Health

FOR THE YEAR 1904.

SANITATION.

DR. DISBROW,	DR. ZEH,	MR. BRIERLEY,
MR. ZIMMERMAN,	MR. DAVENPORT	

FINANCE.

MR. ZIMMERMAN,	DR. ZEH,	DR. DISBROW.
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LAWS AND ORDINANCES.

MR. DOBBINS,	MR. ROSS,	DR. HOLLISTER.
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RULES.

MR. DAVENPORT,	DR. ZEH,	MR. DOBBINS.
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* APPOINTMENTS.

MR. BRIERLEY,	DR. WRIGHTSON,	MR. ROSS.
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SUPPLIES.

MR. ROSS,	MR. DOBBINS,	DR. HOLLISTER.
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CITY HOSPITAL.

DR. WRIGHTSON,	DR. DISBROW,	MR. BRIERLEY,
MR. ZIMMERMAN,	MR. DAVENPORT.	

TRAINING SCHOOL.

DR. HEROLD,	DR. ZEH,	DR. DISBROW,
DR. WRIGHTSON,	DR. HOLLISTER.	

Employees of the Board of Health.

OFFICE DIVISION.

JOHN J. GREENE.....	<i>Clerk Bureau Contagious Diseases</i> 308 Riverside Avenue.
EUGENE W. BELLAR.....	<i>Clerk Sanitary Division</i> 45 Congress Street.
WILLIAM H. YOUNG.....	<i>Clerk Sanitary Division</i> 62 Hunterdon Street.
MISS MARIE PERIER.....	<i>Stenographer to Health Officer</i> 372 High Street.
ELBERT S. BALL.....	<i>Office Boy</i> 19 Nichols Street.
ED. E. WOHL, M. D.....	<i>Supt. Bureau Contagious Diseases</i> 271 High Street.
HERBERT B. BALDWIN.....	<i>Chemist</i> 9 and 11 Franklin Street.
GEO. C. SONN.....	<i>Meteorologist</i> 285 Belleville Avenue.

BACTERIOLOGICAL DIVISION.

DR. R. N. CONNOLLY.....	<i>Bacteriologist</i> City Hospital Building.
DR. THOMAS RIPLEY.....	<i>Asst. Bacteriologist</i> 137 Orchard Street.
DR. ED. CONNOLLY.....	<i>2nd Asst. Bacteriologist</i> City Hospital Building.
ERNEST SKILLMAN.....	<i>Laboratory Assistant</i> 13 North 6th Street.
HERMAN VOLK.....	<i>Culture Collector</i> 108 McWhorter Street.

CITY DISPENSARY.

WILLIAM A. SMITH.....	<i>Apothecary</i> 21 Court Street.
HENRY A. OLTSMANN.....	<i>Asst. Apothecary</i> 191 South 9th Street.
WILLIAM M. GOULD.....	<i>Dentist</i> 89 Halsey Street.

BOARD OF HEALTH.

DISTRICT PHYSICIANS.

WILLIAM H. SCHOPFER.....	43 Read Street
JAS. H. LOWREY.....	79 Congress Street
HENRY W. NOLTE.....	255 Mulberry Street
MATTHEW T. GAFFNEY.....	211 Plane Street
JAS. A. HOFFMAN.....	50 Waverly Avenue
SAMUEL H. BALDWIN.....	479 Clinton Avenue
CHAS. H. BRUCKNER.....	118 Newton Street
ALBERT S. HARDIN.....	7 Humboldt Street
S. B. W. LEYENBERGER.....	98 Bloomfield Avenue
C. B. GRIFFITHS.....	145 Monmouth Street
W. GAUCH.....	255 High Street

SANITARY DIVISION.—MEAT INSPECTORS.

WERNER RUNGE.....	130 Union Street
DANIEL KUHN.....	47 Providence Street

PLUMBING INSPECTORS.

JOHN B. SULLIVAN.....	204 Second Street
JOHN A. WHEALAN.....	44 Second Street
ED. P. COULSTON.....	351 Walnut Street
CHAS. A. HALLGRING.....	99 Frederick Street

MILK INSPECTOR.

OTTO B. SCHALK.....	407 Bergen Street
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SANITARY INSPECTORS.

WM. H. LYLE.....	227 South 6th Street
LOUIS H. BRIDGEM.....	59 Court Street
ANDREW J. BRADY.....	17 Howard Street
JOHN WRIGHT.....	70 Arlington Street
MORRIS SEIDL.....	411 South 8th Street
FORMAN J. REYNOLDS.....	182 Summit Street
CHAS. H. BURKE.....	125 Union Street
BERNARD CAHILL.....	158 South 9th Street
HUBERT O'ROURKE.....	185 Barclay Street

BOARD OF HEALTH

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MICHAEL HELMSTAEDTER.....	299 Mulberry Street
ANTONIO PANZERA.	134 Ferry Street
JOHN F. NEARY...	72 New Street
SAMUEL G. SHARWELL...	124 Second Street
WILLIAM S. WEBB	56 Court Street
PATRICK J. KEATING	421 New Street
GEO. A. VAN HOUTEN...	50 Crawford Street
WILLIAM HOPPER	142 1-2 Sherman Avenue

DISINFECTING CORPS

SAMUEL KNOTT, <i>Chief</i>	.279 Plane Street
HIRAM R. STEWART	.67 Wright Street
LEONARD V. GILLEN... . . . .	.82 East Park Street
THOMAS F. NEWTON. . . . .	.96 Cutler Street
RICHARD J. CORBLEY.	143 Somerset Street
REGINALD RAYMOND.. . . .	105 Chadwick Avenue
THOMAS MULLIGAN	149 Pennsylvania Avenue

WILLIAM BLANCHARD.... *Orderly at Isolation Hospital*
 Sherman Avenue and Concord Street

GEO. FRANCISCO.. *Janitor*
 177 Pennsylvania Avenue

District Physicians, 1904.

- 1st DISTRICT -DR. W. SCHOPFER -District Lines: Polk Street, Lafayette Street, Hamburg Place, Thomas Street and Passaic River.
- 2d DISTRICT -DR. J. H. LAWRLEY -District Lines: Polk Street, Lafayette Street, Hamburg Place, Thomas Street, Newark Bay, City Line, Avenue "D," Pacific Street, Clifford Street, Jefferson Street and Passaic River.
- 3rd DISTRICT -DR. H. W. NOLTE -District Lines: Jefferson Street, Clifford Street, Pacific Street, Tichenor Street, Broad Street, Market Street, Railroad Place and Passaic River.
- 4th DISTRICT -DR. M. T. GAFFNEY -District Lines: Railroad Place, Market Street, Broad Street, Lincoln Park, Spruce Street, High Street, Central Avenue, Fulton Street and Passaic River.
- 5th DISTRICT -DR. J. A. HOFFMAN -District Lines: High Street, Warren Street, Newark Street, Richmond Street, Rankin Street, Charlton Street, Spruce Street.
- 6th DISTRICT -DR. S. H. BALDWIN -District Lines: Charlton Street, Springfield Avenue, Fifteenth Avenue, City Line, Lyons Avenue, Clinton Place, Hawthorne Avenue, Ridgewood Avenue, Livingston Street, Eighteenth Avenue and Spruce Street.
- 7th DISTRICT -DR. C. H. BRUCKNER. -District Lines: Fifteenth Avenue, Springfield Avenue, Rankin Street, Richmond Street, Newark Street, Warren Street, Central Avenue and City Line.
- 8th DISTRICT -DR. W. GAUCH -District Lines: High Street, Eighth Avenue, Clifton Avenue, Norfolk Street, Central Avenue, Hudson Street, and Warren Street.
- 9th DISTRICT -DR. A. S. HARDEN -District Lines: Central Avenue, Warren Street, Hudson Street, Central Avenue, Norfolk Street, Clifton Avenue, Bloomfield Avenue and City Line.
- 10th DISTRICT -DR. S. L. W. LYFENBERGER -District Lines: Fulton Street, Central Avenue, High Street, Eighth Avenue, Clifton Avenue, Bloomfield Avenue, City Line and Passaic River.
- 11th DISTRICT -DR. C. B. GRIFFITHS -District Lines: Avenue "D," Pacific Street, Tichenor Street, Lincoln Park, Spruce Street, Eighteenth Avenue, Livingston Street, Ridgewood Avenue and City Line.

ANTITOXIN AND CULTURE STATIONS.

Established by the Board of Health for the Collection of Cultures and Distribution of Antitoxin.

			N. Y. & N. J. Tel. Nos.
BOARD OF HEALTH OFFICE	880 Broad Street	231	
F. W. RODEMAN	77 Ferry Street	1493	"
O. VON GEHREN	200 Ferry Street	1592J	Bowery
L. GRIESENBECK	28 Bowery Street	1590	Bowery
C. HOLZHAUER	787 Broad Street	1312	"
G. R. PETTY	Prudential Building	864	"
E. F. FIELDING	925 Broad Street	1675	"
GEO. LINNETT & BRO.	77 Leonard Park	3034	"
L. D. GREENLIEF	579 Broad Street	1508	"
E. A. SAYRE	482 Broad Street	1536R	"
W. R. SCHÜDER	95 Belleville Avenue	1579	"
OSBORNE & KLEIN	289 Belleville Avenue	1506	"
S. FPSIEIN	150 Orange Street	1380	"
C. P. MOLL	106 Central Avenue	1319	"
L. M. AVERY	261 Central Avenue	1504	"
L. I. SPAEHLE	169 South Orange Avenue	1539	"
D. S. BELDON	315 South Orange Avenue	1514A	"
E. RECHLE	362 Springfield Avenue	2023	"
K. STAEBLER	166 Springfield Avenue	1447	"
W. E. MOORE	503 Clinton Avenue	1332L	"
F. F. CRISSEY	320 Bank Street	1391	"
J. B. FOSTER	401 Seventh Avenue	2051	Roseville
H. WELLER	190 Washington Avenue	1349L	"
F. FEINDT	76 Belmont Avenue	1394L	"
C. MENK	106 Market Street	291	"

BOARD OF HEALTH

Clinics at City Dispensary.

MEDICAL

MALE AND FEMALE.

Every day excepting Sundays, at 9 A. M.—District Physicians in attendance.

DISEASES OF SKIN.

Tuesdays and Fridays at 9.30 A. M.—Dr. H. J. F. WALLHAUSER.

GYNAECOLOGICAL.

Tuesdays and Fridays at 3 P. M.—Dr. E. Z. HAWKES.

DISEASES OF CHILDREN.

Mondays, Wednesdays and Fridays at 10 A. M.—Dr. F. McEWEN.

GENITO URINARY CLINIC

Tuesdays and Saturdays at 10 A. M.—Dr. J. W. WILSON.

SURGICAL.

Daily at 12 M., except Saturday and Sunday.—Dr. L. WEISS.

DENTIST

Mondays, Wednesdays and Fridays at 1 P. M.—Dr. W. M. GOULD.

THROAT AND NOSE

Mondays and Thursdays at 3 P. M.—Dr. H. A. TOWLE.

ORTHOPAEDIC

Mondays and Thursdays at 12 M.—Dr. S. TWINCH.

Annual Report
OF THE
HEALTH OFFICER
FOR THE YEAR 1904.

ANNUAL REPORT
OF THE
HEALTH OFFICER
FOR THE YEAR 1904.

To the Honorable the Board of Health of the City of Newark, New Jersey:

GENTLEMEN I have the honor to herewith present to you my report of the workings of the various divisions of the Department of Public Health, together with a report of the Bacteriologist, Superintendent of the Bureau of Contagious Diseases and Chemist of the Board, for the year ending December 31, 1904.

SANITARY DIVISION.

The city is divided into sixteen districts patrolled by sixteen Inspectors appointed by the Board. Each Inspector is held responsible for the sanitary condition of his district.

CONSOLIDATED REPORT OF NUISANCES FOR
THE YEAR 1904.

Inspections from complaint book	3,003
Inspections from complaint book, verified	2,535
Inspections from complaint book, no cause	468
Number of original inspections made	11,235
Total number of inspections made	14,238
Number of written notices served	2,659
Total number of abatements	2,562
Number of verbal notices served	5,071

Number of abatements from same	4 158
Number of hours in court	240-2
Cistern water analyzed	2
Well water analyzed and examined	33
Wells closed	11
Sewer connections ordered	696
Sewer drains inspected	1,421
Cesspools inspected	182
Alleys inspected	535
Alleys filthy	96
Alleys need repairing	69
Streets need cleaning	116
Areas dirty	593
Cellars dirty	1 148
Ashes accumulation, yards	970
Garbage accumulation, yards	621
Drainage surface	57
Lots filthy	215
Lots stagnant water	111
Manure accumulation	708
Defective water pipes	662
Houses filthy	28
Houses unfit for habitation	10
Cellars unfit for habitation	8
Slaughter houses inspected	45
Houses unprovided with privy vault or water-closet	9
Houses with no water supply	573
Houses with roofs leaking	170
Hydrants defective	71
Privy houses filthy	158
Privy vaults full	420
Cesspools full	263
Privy houses dilapidated	30
Privy vaults ordered reconstructed	21
Privy vaults ordered out	832
Yards inspected	13,375
Yards filthy	1,511
Plumbing defective	922
Water closets defective	880
Stables inspected	1,381
Total number of reinspections	9 004
Total number of nuisances found	9 954
Number of house to house inspections made	521

BOARD OF HEALTH.

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Number of privy vaults and cesspools cleaned ..	213
Permits granted to clean the same ..	213
Number of cow stables inspected ..	165
Number of animals licensed ..	1,005
Number of suit cases instituted for violations of the Sanitary Code ..	207
Number of cases in which penalties were imposed ..	15
Number of cases discontinued upon payment of costs of Court—nuisances abated ..	114
Number of cases discontinued—change in ownership ..	18
Number of cases discontinued prior to summonses being served—work having been done ..	60
Number of cases instituted by Milk, Food and Drug Inspector ..	8
Penalties imposed ..	5
One case lost and two cases still pending ..	
Number of suit cases instituted by Meat Inspectors ..	3
Penalties imposed ..	3

PLUMBING DIVISION.

This division consists of four practical plumbers, and the following is a summary of the work performed by them during the year 1904 :

Plans approved ..	1,976
Plans rejected ..	194
Water tests made ..	1,376
Plumbing inspections made ..	4,246
Final plumbing inspections made ..	519
Smoke tests made ..	453
Peppermint tests made ..	23
Sewer permits granted ..	1,339
Cesspool permits granted ..	38
Privy vault permits granted ..	12
Relay sewer permits granted ..	73
Violations served ..	14
Violations rectified ..	8
Number of hours in Court ..	35

MEAT AND LIVE STOCK DIVISION.

This division consists of two Inspectors—one a veterinarian, whose duty it is to look after slaughter houses and wholesale meat markets; the other an experienced butcher,

whose duty it is to visit all the public and private meat and vegetable markets.

The following is a summary of the work performed during the year 1904:

INSPECTED.

Cattle	22,741
Calves	17,019
Sheep	25,910
Hogs	4,466
Total	70,136

CONDEMNED.

Calves	62
Carcasses of beef	7
Cows	1
Horses	3

BUTCHER SHOPS VISITED.

Number of visits	8,827
Number of carcasses of beef inspected	27,819
Number of lamb and sheep	98,550
Number of calves	13,664
Number of hogs	14,383
Total	163,243

CONDEMNED

Calves, carcasses	62
Fish	330 lbs
Two boxes of beef, tenderloins.	
Poultry	25 lbs

Nine complaints were attended to and adjusted. Centre Market has been visited daily.

DISINFECTING CORPS.

This division consists of a Chief and six Inspectors detailed for that purpose.

The following is a summary of the work performed during the year 1904:

DISINFECTIONS

Diphtheria .	1,536
Scarlet Fever .	1,439
Phthisis .	554
Small Pox .	1
Special ..	233
Total number of houses ...	3,763
Total number of rooms .	10 535
Number of cubic feet of air space	10 535 000
Number of control tests used	2,154
Number of visits to houses under quarantine ..	3,792
Number of nuisances found	316
Number of funerals supervised	117

MILK INSPECTOR'S REPORT.

The following milk inspections were made, including food and drugs, during the year 1904:

Number of milk wagons halted for inspection	3,457
Number of cans of milk inspected on same	5,247
Number of lactometer tests	1,725
Number of stores visited	470
Number of cans of milk inspected	1,012
Number of lactometer tests ..	294
Number of samples found suspicious and sent to Chemist for analyses	352
Samples of ice delivered to the Bacteriologist for examination ..	3

In addition to the foregoing table some fruit was condemned, and some samples were also taken of spirits and drugs, which were chemically examined for deleterious elements.

Some articles of food, such as canned goods, were examined upon the complaints of citizens, also some fruit exposed on stands to the open air for sale, likely to become contaminated, was ordered covered with suitable glass covers.

THE CITY DISPENSARY AND OUT-DOOR POOR DIVISION.

The following is a detailed statement of the services rendered by the different clinics, together with the treatment of what is known as the Out-door Poor Contingent:

PERSONS TREATED AT THE FOLLOWING CLINICS

Medical ..	13,903
Surgical ..	2,151
Diseases of the Skin ..	1,489
Diseases of Children	1,349
Diseases of Women	276
Diseases of Genito-Urinary Organs	1,307
Diseases of Throat and Nose	352
Number of Vaccinations	5,555
Number of Teeth extracted	1,439
Number of clinic prescriptions	37,171

NUMBER OF DISTRICT PRESCRIPTIONS DISPENSED AS FOLLOWS

1st District	692
2d District	397
3d District	1,292
4th District ..	889
5th District ..	702
6th District ..	385
7th District ..	496
8th District ..	1,060
9th District ..	288
10th District ..	889
11th District ..	490
	--
Total number of District Prescriptions ..	7,580

RECAPITULATION

Total number of patients treated	27,891
Total number of prescriptions dispensed ..	44,751

SUMMARY OF SERVICES RENDERED BY DISTRICT PHYSICIANS.

	1st Dist.—Dr. W. H. Schopfer.	2nd Dist. Dr. J. H. Lowrey.	3rd Dist. Dr. H. W. Nolte.	4th Dist.—Dr. M. T. Gaffney.	5th Dist.—Dr. J. A. Hoffman.	6th Dist.—Dr. S. H. Baldwin.	7th Dist.—Dr. C. H. Bruckner.	8th Dist.—Dr. W. Gauch.	9th Dist. Dr. A. S. Harden.	10th Dist.—Dr. S. B. W. Leyenberger.	11th Dist.—Dr. C. B. Griffiths.
Actual number of houses visited.....	369	288	437	1105	410	301	288	512	179	458	220
Actual number of families visited....	373	289	444	957	456	313	300	528	232	488	250
Number of sick prescribed for.....	397	290	485	943	514	348	315	555	210	584	324
Number of sick found treated by other physicians.....	9	9	3	64	12	14	25	0	10	4	2
Total number of re-visits made	1164	692	1274	1260	1164	732	764	1106	409	844	731
Number of patients sent to hospital.	38	25	49	68	79	18	33	55	21	98	24
Number of deaths	3	6	22	10	9	14	5	10	3	10	8

RECAPITULATION.

	Actual number of houses visited.	Actual number of families visited.	Sick prescribed for.	Found treated by other physicians.	Total number of re visits.	Number of patients sent to hospitals.	Number of deaths.	Number of circulars.
1st District	369	373	397	9	1164	38	3	0
2nd "	288	289	290	9	692	25	6	0
3rd "	437	444	485	3	1274	49	22	0
4th "	1105	957	943	64	1260	68	10	0
5th "	410	456	514	12	1164	76	9	0
6th "	301	313	348	14	732	18	14	0
7th "	288	300	315	25	764	33	5	0
8th "	512	528	555	0	1106	55	10	0
9th "	179	222	210	10	409	21	3	0
10th "	458	488	584	4	844	98	10	0
11th "	229	250	324	2	731	24	8	0
Total.....	4576	4620	4965	152	10150	505	100	0

RECEIPTS AND DISBURSEMENTS OF THE BOARD OF
HEALTH FOR THE YEAR ENDING DEC 31, 1904,

RECEIPTS

Balance on hand Jan. 1, 1904	\$ 53.48
Appropriated by Common Council (Tax Ordinance)	20,000 00
Appropriated by Common Council (Contingent Fund)	43,000 00
Special appropriation by Common Council (Mosquito Extermination)	5,000 00
Dead Animal Contract.....	2,100 00
Penalties collected (Board of Health Cases—for violation of Sanitary Code).....	687 93
Penalties collected (Board of Health Cases—Milk and Food).....	272 24
	— \$71,113 65

OFFICE RECEIPTS

Filing plans (Plumbing Division)	\$3,348 00
Milk licenses	2,314 00
Privy vault and cesspool permits	21 30
Scavenger licenses	80 00
Animal permits	100 50
Ice licenses	408 00
Ice plates	105 00
Adams & Co. (heating 2nd floor)	130 00
Sale of junk	10 00
Chicken slaughter house permit	1 00
	— \$6,517 80

BACTERIOLOGICAL DIVISION.

Sale of Sepsis and Tubercle Antitoxins.....	\$ 415 00
Sale of Diphtheria Antitoxin.....	1,152 80
Bacteriological examinations	114.85
	— \$1,682 65
Total receipts	\$79,314 10

DISBURSEMENTS—SANITARY DIVISION

Health Officer	\$4,500 00
Clerks (3)	4,083 31
Stenographer	900 00

BOARD OF HEALTH.

Office Boy	296 00	
Supt. Bureau Contagious Diseases	2,000 00	
Chief Disinfecting Corps . .	1,200 00	
Chemist	1 500 00	
Meat Inspector (Live Stock and Veterinarian of Board)	1,900 00	
Meat Inspector	1,000 00	
Plumbing Inspectors (4)	4,516 66	
Milk and Food Inspector	1,083 31	
Sanitary Inspectors (22)	19,803 33	
Orderly at Isolation Hospital .	720 00	
Janitor .	480 00	
Meteorologist	72 00	
		\$44,054 61

CITY DISPENSARY.

City Apothecary	\$1,500 00	
Asst. City Apothecary	1 066 64	
Dentist .	300 00	
Janitor .	240 00	
		\$3,106 64

BACTERIOLOGICAL DIVISION

Bacteriologist .	\$3,000 00	
Asst. Bacteriologist	1 066 64	
2nd Asst. Bacteriologist	276 67	
Laboratory Assistant	900 00	
Culture Collector	930 00	
		\$6,173 31

DISTRICT PHYSICIANS

District Physicians (11)	\$5 280 00	
		\$58 614 56

DISBURSEMENTS -SANITARY DIVISION.

Office rent	\$2 500 00
-------------	------------

LIGHTING AND HEATING.

Coal (Isolation Hospital) .	\$ 36 50	
Coal (office) ..	269 25	
Electric Light .	179 40	
Gas	7 50	
		\$492 65

BOARD OF HEALTH.

23

OFFICE FURNITURE.

Shades and fixtures .	\$10 70	
Cushion seat .	2 50	
Curtains	11 80	
Picture frames	3 80	
Linoleum	40 00	
Settees (2) .	31 70	
Carpet ...	11 25	
		\$111 75

REPAIRS

Smoke machine .	\$ 8 05	
Office Clock ..	2 50	
Plumbing . .	22 65	
Carpenter work .	23 61	
Electric work .	11 09	
		\$67.90

TELEPHONE SERVICE

Isolation Hospital	\$ 90 05	
Supt. Bureau Contagious Diseases (residence)	60 50	
Health Officer's residence	69 55	
Health Office	162 31	
		\$382 41

SUPPLIES

Seal .	\$ 1 25
Lactometer .	1 35
Hair brush .	2 45
Moulding .	3 53
Lawn mower .	6 50
Awnings	7 00
Rubber stamps .	7 90
Telephone brackets	9 00
Hay and feed (Isolation Hospital)	8 21
Uniform buttons .	10 00
Hardware	11 50
Attachment for smoke machine	12 25
Ice license plates	24 75
Ice (year's supply) .	26 00
Smoke machine .	30 00
Inspectors' badges	33 00

Health Commissioners' badges	48.00
Mimeograph	50.00
Janitor's supplies	90.51
Incidental expenses (carfare, postage, etc.)	720 52
Printing and stationery	939 76
Drilling bottles (milk samples)	5.00
Advertising amendment to Ice Ordinance	6 95
Water rent (Isolation Hospital)	7 50
Janitor (extra service)	12.00
Costs (milk and food cases 2nd Dist. Court)	17 89
Draping office (Coms. Geddes and Wallace, deceased)	19.00
Carfare (Inspectors Brady and Sharwell, Acting Culture Collectors)	25 65
Expenses of Board of Health Commissioners on inspection of watershed	31.50
Expenses of Inspector Brady to watershed in securing samples of water (board and carriage hire)	32.50
Insurance—office fixtures	37.50
Floral tribute—Coms. Geddes and Wallace, deceased	40 00
Carriage hire	73 00
Wm. H. Erhardt (caring for meadow ditching)	76.50
Resolution (reimbursing physicians for reporting contagious diseases for 1900 and 1901)	496.00
Engrossing resolutions of Coms. Geddes and Wallace, deceased	100 00
Werner Range (expenses to meeting American Vet. Asso'n, at St. Louis, Mo.)	112 50

\$6,691.68

CITY DISPENSARY

Taking down awnings	\$ 2 00
G. s.	11 20
Surgical supplies	12 69
Toweling	16 30
Printing and stationery	25 50
Washing towels	33 09
Ice	40.07
Janitor's supplies	27.53
Plumbing work	78 56
Telephone service	84 20

BOARD OF HEALTH

25

Coal	104 50	
Vaccine	272 75	
Drugs	1,509 51	
	<hr/>	\$2,217.90
		<hr/>
		\$8,909.58

DISINFECTING CORPS

Oil cans	\$.60	
Wrench .....	.60	
Safety pins	1 50	
Tacks	1 50	
Cleaning needles	2.40	
Nozzles	2.40	
Kerosene oil	11.15	
Rubber hose	20 00	
Cotton batting	46.80	
Printing and stationery	67 20	
Regenerators (4)	100.00	
Disinfectants	559 20	
	<hr/>	\$813 35

STABLE

Wagon hire.....	\$ 7.00	
Harness, blankets, etc.....	43.25	
Horse shoeing	59.75	
Board of horse	253 03	
	<hr/>	\$363 03

REPAIRS

Regenerators	\$ 2 75	
Wagon	95 00	
	<hr/>	\$97 75

MISCELLANEOUS.

Car tickets	\$70 00	
	<hr/>	
Total		\$1,344 13
	<hr/>	
Grand total		\$10,253 71

BACTERIOLOGICAL DIVISION.

Swabs (antitoxin horses)	\$ 1.25	
Needles	4.70	
Charts	5.00	
Hose and fixtures	7.00	
Repairing sterilizer	8.65	
Rubber discs	11.50	
Stable sheets and hoppers	13.70	
Steam pressure regulator	13.75	
Insurance (antitoxin horses)	30.00	
Printing and stationery	40.00	
Wooden antitoxin cases	58.69	
Horse shoeing	100.00	
Refrigerator	138.75	
Horses (2), production of antitoxins	165.00	
Dr. Tarbell (2nd Asst. Laboratory—salary for three months)	150.00	
Incidental expenses (postage, etc.)	167.20	
Guinea pigs	223.00	
Laboratory supplies	303.05	
Board of antitoxin horses	1,212.40	
		\$2,653.64
Total		\$12,907.35

PRODUCTION OF SEPSIS AND TUBERCLE ANTITOXINS

Horse shoeing	\$ 60.25	
Purchase of horse	100.00	
Board of horses (3)	721.20	
		\$881.45

MOSQUITO EXTERMINATION.

Ditching meadow land	\$4,000.00
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COST OF MAINTENANCE OF SMALL POX PATIENTS AT
ISOLATION HOSPITAL FROM JAN 1 TO
APRIL 1, 1904

Drugs	\$ 1.14
Kerosene oil	3.20
Stove	4.15
Milk	5.68

BOARD OF HEALTH.

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Kitchen utensils	7 38	
Electric light	16.00	
Coal	68.75	
Groceries	85.40	
Plumbing work	187 07	
Salaries (nurses and ward maids)	288 14	
		<hr/>
		\$666 91
Grand total		<hr/>
		\$18,455 71

STATEMENT ASSETS

Balance on hand Jan. 1, 1904	\$ 53 48	
Appropriated by Common Council	63 000 00	
Special appropriation (mosquito extermination)	5 000 00	
Dead anima. contract	2,100 00	
Penalties collected (Board of Health cases)	960 17	
Office receipts (Sanitary Division)	6,517 80	
Bacteriological Division receipts	1,682 65	
		<hr/>
		\$79,314 10

LIABILITIES SALARIES

Sanitary Division	\$44,054 61	
City Dispensary	3 106.64	
Bacteriological Division	6,173 31	
District Physicians	5,280 00	
		<hr/>
		\$58,614 56

SUPPLIES

Sanitary Division	\$6,691 68	
City Dispensary	2,217 90	
Disinfecting Corps	1 344 13	
Bacteriological Division	3 535 09	
Isolation Hospital (Small Pox, Jan. to May)	666 91	
Ditching meadows (mosquito extermination)	4,000 00	
		<hr/>
		\$18,455 71
		<hr/>
Total liabilities	\$77,070 27	
Cash on hand Jan. 1, 1905	2,243 83	
		<hr/>
		\$79, 314 10

MEDICAL INSPECTION OF SCHOOLS

Sufficient time has elapsed so that we are able to form some estimate of the system and its workings. We suggest that it can be very materially improved. More power should be given to the Medical Inspectors. The system of depending on the teacher to say what pupils should be selected for examination should be done away with, and a direct or classroom inspection should be substituted. There should be a closer supervision in the matter of vaccination. Further, occasional examinations made by competent experts to ascertain eye and ear defects, to better the placing of pupils in the classroom. The system of public lectures instituted under the auspices of the Board of Education, should include some hygiene and public instruction in medical matters pertaining to the schools. We believe that the Medical Inspectors, as a body, would find their work and interests better appreciated along these lines than as the system is now constituted. The trouble is with the system, rather than with the Inspectors, which may account for some disappointment in the matter of reduction of contagious diseases.

DIPHTHERIA DURING 1904.

In the records of the Bacteriological Laboratory, which may be found in a separate report, I find that in 79 cases of Diphtheria, in which death occurred, no bacteriological diagnosis was made, indicating that more than one half of all the cases that died from Diphtheria in 1904, were seen by physicians so late in the disease that there was no time, or perhaps need, for bacteriological diagnosis.

The fact that 79 children were left so long without proper medical treatment shows that the parents or guardians and the children failed to recognize that their children were sick until too late to have their lives saved. This suggests the advisability of instituting some plan by which parents might receive instruction in such matters, either by

popular lectures, or some other means, in order to learn when to send for the doctor, for unless the interest of the parents is awakened it will be impossible to keep our mortality down, particularly in children's diseases.

The records for 1904 show that 150 deaths from Diphtheria occurred in Newark during the year, and 131, or 87 per cent., of these were under 7 years of age. This indicates that *simple sore throat*, in children under seven years of age, should be seen by the doctor to day or to night, as to-morrow it may be too late to save the life of the child.

TUBERCULOSIS.

Newark, like all large manufacturing cities, has its share of Tuberculosis, and in our laboratory records we find that 804 cases were added to the list of victims during 1904. Many of these patients could and ought to recover if they could only be properly instructed regarding the nature of the disease and the modern methods of combating the progress of it, but instead of assisting in their own recovery, many of these victims only become a menace to their companions on account of their lack of knowledge regarding the cause of the disease and the manner in which it is communicated from the infected to the uninfected. It has become generally recognized by those who study this disease, that only by awakening popular interest and by spreading among the people, generally, an intelligent knowledge of the known facts as to how the disease is contracted, can we hope to diminish the number of victims of Tuberculosis.

It would be unnecessary and unwise to create in the minds of the community an unwholesome fear of the disease and its unfortunate victims, but by teaching the people the danger of dried and pulverized expectoration, a great deal of good can be accomplished.

This is, perhaps, one of the greatest sources of infection and if a knowledge of the danger of germ laden dust could

be popularized, every one would constitute himself into a committee of one to admonish, or even help to have punished, persistent violators of the ordinance against expectorating in public places.

There should be no danger in working with a person unfortunate enough to have contracted Tuberculosis, provided the victim observes the laws of common decency, unless the patient coughs or sneezes a great deal, when, of course, we should avoid the zone infected by the fine spray thrown out. This applies to the various trades and occupations where workers are not brought into close personal contact. There are some occupations, however, which are unfit for consumptives, because it is almost impossible for patients to constantly keep their hands free from tuberculous material, and the handling of milk, butter, bread, etc., which are to be consumed by others should not be undertaken by the tuberculous. In some of the largest and best regulated cigar factories, consumptives are not permitted under any condition, and this should be the rule in all.

Again, young children, who are likely to be debilitated by the various diseases of childhood, should not be exposed to the constant company of tuberculous teachers and attendants.

Houses formerly occupied by tuberculous tenants should not be used by others until after a thorough disinfection of the premises by skilled disinfectors, and the necessity for this is strikingly illustrated in the Bacteriologist's report, which shows that we have records of 69 different houses in this city in which two or more cases have occurred during the last six years.

In many communities societies are being formed for the purpose of acquiring and disseminating knowledge of Tuberculosis, and interest is being awakened in the important matter of learning how to prevent infection. Prevention of disease is more important to the community than treatment,

and the various societies which have for their object the study of how to prevent Tuberculosis, are rendering a valuable service.

CITY WATER SUPPLY.

The Pequannock watershed has been visited and inspected at various times during the year, sources of pollution sought for and recommendations made for improving existing conditions when found necessary.

The Chemical and Bacteriological examinations show that the water when it reaches Newark maintains a high degree of purity for a natural untreated supply.

REPORT OF THE DIVISION OF BACTERIOLOGY.

Mr. D. D. Chandler, Health Officer:

DEAR SIR Herewith is respectfully submitted the tenth annual report of the Bacteriological Division, which brings our records up to the year ending December 31, 1904.

During the ten years that have elapsed since this division was established by the Board of Health, each succeeding year's report has shown that the usefulness of the work performed has increased, and it is gratifying to be able to report that the medical profession has taken an active interest in our work, and has supported the efforts of the Board of Health to make this division more and more useful to the community.

The following table shows the routine work performed during 1904:

LABORATORY RECORD FOR 1904.

DIPHTHERIA EXAMINATIONS.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Primary Cultures	369	242	234	202	129	134	137	122	186	288	463	475	2951
True Cases	100	67	53	53	43	57	69	77	111	134	190	162	1116
Primary and Secondary Cultures	543	360	339	423	222	226	249	250	412	568	806	830	5240
DIPHTHERIA ANTITOXIN.													
No. of Vials Produced	708	186	396	156	244	722	250	457	571	386	781	1843	5970
No. of Vials Distributed	437	334	284	308	245	245	325	401	503	375	770	887	5414
SEPSIS ANTITOXIN.													
No. of Vials Produced	706	145	817	0	0	400	667	0	0	629	539	390	4293
No. of Vials Distributed	231	270	287	309	314	353	122	116	296	150	558	306	3312
TUBERCLE ANTITOXIN.													
No. of Vials Produced	0	0	453	0	433	0	0	0	0	272	0	451	1613
No. of Vials Distributed	174	109	154	96	95	103	84	123	78	127	127	140	1410
TUBERCULOSIS EXAMS.													
Tubercle Bacilli Found	67	85	84	67	71	60	69	71	65	53	60	52	804
Tubercle Bacilli Not Found.	87	99	138	96	94	59	55	62	59	67	76	67	959
BLOOD EXAMINATIONS....	49	78	70	74	70	49	71	72	84	82	84	59	842
WATER EXAMINATIONS ..	8	9	9	9	24	26	26	22	12	18	9	9	181
DISINFECTANT TESTS	222	182	186	185	191	176	173	151	201	199	257	30	2153

DIPHTHERIA.

This disease claimed a large share of our attention during 1904, especially during the last third of the year, when a decided increase in the number of cases occurred.

The mortality, however, especially where antitoxin was used, has been kept at a low figure, and indeed our results in the treatment of Diphtheria with the antitoxin prepared by the Board of Health compare very favorably with the results obtained in any city where the serum treatment is used.

During 1904 there were reported in Newark 1,653 cases of Diphtheria; 1,309 of these received injections of antitoxin with a mortality of 95, or 6.7-10 per cent.

This is a very favorable result, particularly when compared with the cases that were not treated with antitoxin. In this class we had 254 cases with 55 deaths, giving a percentage mortality of 21.65-100 per cent.

If no antitoxin was used in Newark last year, it is reasonable to suppose that the average mortality would have been about the same as we find in the 254 cases where it was not employed, and in that case we would have had over 350 deaths instead of the 150 that occurred, forcing the conclusion that 200 lives were saved last year in Newark, alone, by the Board of Health furnishing Diphtheria Antitoxin free of charge for the treatment of the disease in this city.

The following table gives the mortality for Diphtheria in Newark during the last ten years, or since the beginning of the antitoxin treatment for this disease, and contrasts the antitoxin cases with the non antitoxin cases for this period:

ANTITOXIN USED

YEAR.	CASES.	DEATHS.	PERCENTAGE.
1895 ..	384	52	12
1896 .	905	106	12
1897	563	61	11

YEAR	CASES.	DEATHS	PERCENTAGE.
1898	646	68	10
1899	798	70	8
1900	987	80	8
1901	956	58	6
1902	775	61	7
1903	953	71	7
1904	1,399	95	6 7-10

ANTITOXIN NOT USED.

YEAR	CASES.	DEATHS	PERCENTAGE.
1895	937	221	23
1896	356	112	31
1897	406	76	18
1898	373	65	17
1899	372	54	14
1900	430	63	14
1901	198	45	22
1902	210	44	19
1903	197	49	25
1904	254	55	21 6-10

TUBERCULOSIS.

The number of specimens from suspected cases of this disease examined last year was 1,763, and the tubercle bacilli were found in 804 cases.

The following table gives the number of specimens examined for tubercle bacilli during the last seven years:

SPUTA EXAMINATIONS FOR TUBERCLE BACILLI.

YEAR.	POSITIVE.	NEGATIVE.	TOTAL.
1898	312	378	690
1899	308	491	799
1900	380	623	1 003
1901	366	594	960
1902	796	746	1,542
1903	1,030	1,041	2,071
1904	804	959	1,763

The following report has been prepared from the laboratory records by the Assistant Bacteriologist, Dr. Thomas H. Ripley:

To the Bacteriologist:

DEAR SIR -The number of examinations made at the laboratory of sputa from suspected cases of tuberculosis for the year 1904 was 1,763, of which 804 contained the "tubercle bacillus." The physicians for whom the examinations were made furnished data regarding the sex and age of 346 cases in which tubercle bacilli were found; 215 of these were male and 131 female.

The following table shows the sex and time of life in which the disease occurs

AGE.	MALE.	FEMALE.
1 to 10	..	..
10 " 20	13	21
20 " 30	80	60
30 " 40	68	32
40 " 50	33	12
50 " 60	14	3
60 and over	7	3
	<hr/> 215	<hr/> 131

The above table shows that it is between the ages of 20 and 40, the most useful and active period of life, that the greatest number of cases occur.

The limited data furnished by the physicians shows that in the 346 cases examined, 79 or over 22 per cent had consumption in the immediate family. Direct infection may have taken place in this way.

The following tables have been prepared from the laboratory records of examinations made in the past six or six years, so far as the physicians have furnished *positive* data, to show the distribution of tuberculosis in the city.

Number of streets in which cases occurred..... 362
 Number of houses in which cases occurred..... 1,585

It will be seen from an examination of the table which follows, that over 4 1-3 per cent of the dwellings affected show evidence of infection by a repetition of tuberculosis in years subsequent to the first case examined.

Table showing distribution of infected houses where two or more cases have occurred in the past six years:

Houses.	STREETS.	Year in which cases occurred.						Total (cases.)
		1899	1900	1901	1902	1903	1904	
1	Ann st		1			1		2
1	Astor st.		1	1				2
1	Barclay st.			1	1			2
1	Belleville ave.						2	2
1	Bergen st. { 2		1			1		2
1	" " { 2		1	2			1	4
1	Belmont ave			1	1			2
1	Boston st.	1					1	2
1	Brill st		1	1				2
1	Broome st. { 3	1					1	2
1	" " { 3		1	1				2
1	" " { 3			1		1		2
1	Brientnall pl	1	1					2
1	Bruce st. { 2		1		1			2
1	" " { 2						2	2
1	Camden st					1	1	2
1	Central ave	1				1		2
1	Clifton ave				1	1		2
1	Congress st.				1		1	2
1	Court st.	1	1					2
1	Drift st. { 2						2	2
1	" " { 2	1					1	2
1	Duryea st			1	1			2
1	Eighth ave		1			1		2
1	Elm st				1		1	2
1	Ferry st. { 3		1	1		1		3
1	" " { 3		1		1			2
1	" " { 3			1		1		2
1	Fifteenth ave	1			1			2
1	Freeman st	1			1			2
1	Garside st. { 2	1		1				2
1	" " { 2				1	1		2
1	Hamburg pl	1			1			2
1	Houston st. { 2				2			2
1	" " { 2		1		1			2
1	Hunterdon st.		1			1		2
1	" " { 4			1		1		2
1	" " { 4				1	1		2
1	" " { 4					1	1	2
1	L. He st.			1			1	2
1	Livingston st	1	1					2
1	Maga He st	1				1		2
1	Mt Pleasant ave			1		1		2
1	Mulberry st	1	1					2
1	Newark st.					2		2

Houses	STREETS.	Year in which cases occurred.						Total Cases.
		1899	1900	1901	1902	1903	1904	
1	Newton st.			1	1			2
1	Orleans st.		1				1	2
1	Pennsylvania ave.	1					1	2
1	Prince st.		2					2
1	" "		1	1				2
1	Prospect st.					2		2
1	Rankin st.						2	2
1	Rose st.				1	1		2
1	Second st.					1	1	2
1	Sixteenth ave.				1		1	2
1	South Nineteenth st.			1	1	2		4
1	South Sixth st.				1		1	2
1	South Orange ave.	1				1		2
1	Springfield ave			1			1	2
1	Spruce st.		1		1			2
1	State st.				1		1	2
1	Thirteenth ave.				1		1	2
1	Vanderpool st.				1	1		2
1	Wakeman ave.				1	1		2
1	Walnut st.		1				1	2
1	Washington st.				1	1		2
1	Waverly ave.					1	1	2
1	Wickliffe st.				1	1		2
1	William st.			1			1	2
69		15	22	20	28	30	28	143

It was noticed in going over the records that a house which has had a case of consumption in it will be apt to have another within a few years, and may have a number in close succession; also that approximate houses are considerably exposed to the contagion so that it appears in groups in different localities. While density of population and cold attract the disease, it also appears in the more thinly populated and cleanly sections of the city, showing the highly infectious character of tuberculosis.

Very respectfully,

DR. THOS H. RIPLEY.

Asst. Bacteriologist

ANTITOXINS FOR SEPSIS AND TUBERCULOSIS.

The production of the Special Antitoxins for Sepsis and Tuberculosis has been continued during 1904, and the demand for these sera justifies the production.

These antitoxins can only be obtained at the laboratory by personal application of physicians, and the fact that we have distributed 4,722 doses of these productions, on the personal request of physicians, during the year, indicates that they have a sphere of usefulness.

The following table shows the monthly distribution of Sepsis and Tubercle Antitoxins during 1904:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Sepsis Antitoxin Distributed	231	270	287	309	314	353	122	116	296	150	558	306	3312
Tubercle Antitoxin Distributed	174	109	151	96	95	103	84	123	78	127	127	140	1410

CITY WATER SUPPLY.

Frequent Bacteriological examinations of the Pequannock water were made during the year, the results of which are given in the following table, to which is appended the average number of bacteria per C. C., as determined from the year's analyses for different points from Macopin Intake to the faucets in Newark:

These averages show that the character of the Pequannock water as delivered in Newark, justifies the claim that this city is particularly fortunate in having a water supply of exceptionally good quality.

EXAMINATION OF PEQUANNOCK WATER DURING 1904.

DATE. 1904.	ORIGIN OF SAMPLE.	No Bact Per C. C.	Amount of Water causing Fermenta- tion in 5 C. C. Glucose Bouillon.					
			$\frac{1}{10}$	$\frac{1}{5}$	$\frac{1}{2}$	$\frac{1}{1}$	$\frac{1}{2}$ C. C.	$\frac{5}{1}$ C. C.
Jan. 19.	Oak Ridge Stream, above Clinton Stream	770			+	+		-
" "	Clinton Stream, above Oak Ridge Stream	630						
" "	Kanouse Creek, above Pequannock River.	930						
" "	Echo Lake Stream, above Pequannock River	840						+
" "	Macopin Intake, inside Gatehouse	760						
" "	Belleville Reservoir, inside Gatehouse	320					+	+
" "	Board of Health Office, 880 Broad St	130						
" "	Laboratory Faucet, City Hospital.	40						
Feb. 16	Oak Ridge Stream, above Clinton Stream	630					+	+
" "	Clinton Stream, above Oak Ridge Stream	420						+
" "	R. R. Tower Stream, back of Brown's Hotel.	760						+
" "	Kanouse Creek, above Pequannock River...	370						+
" "	Echo Lake Stream, above Pequannock River	570				+		+
" "	Macopin Intake, inside Gatehouse.	440						+
" "	Belleville Reservoir, inside Gatehouse	110						+
" "	Board of Health Office, 880 Broad St.....	70		-	-	-	-	-
" "	Laboratory Faucet, City Hospital.....	30	-	-	-	-	-	-
Mch. 29.	Oak Ridge Stream, above Clinton Stream.	430						
" "	Clinton Stream, above Oak Ridge Stream.	120						
" "	R. R. Tower Stream, back of Brown's Hotel	150						
" "	Kanouse Creek, above Pequannock River....	270						
" "	Echo Lake Stream, above Pequannock River..	340					+	-
" "	Macopin Intake, inside Gatehouse	280						
" "	Belleville Reservoir, inside Gatehouse	370		+	+	+	+	+
" "	Board of Health Office, 880 Broad St	30				-		+

EXAMINATION OF PEQUANNOCK WATER DURING 1904—CONTINUED

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DATE 1904.	ORIGIN OF SAMPLE	No. Bact. Per C. C.	Amount of Water Causing Fermenta- tion in 5 C. C. Glucose Bouillon.					
			$\frac{1}{10}$	$\frac{1}{5}$	$\frac{1}{2}$	$\frac{1}{1}$	1 C. C.	5 C. C.
Mch. 20	Laboratory Faucet, City Hospital.	30						
Apr. 23	Oak Ridge Stream, above Clinton Stream.	460						
" "	Clinton Stream, above Oak Ridge Stream.	140					+	+
" "	R. R. Tower Stream, back of Brown's Hotel.	880						
" "	Kanouse Creek, above Pequannock River.	430						
" "	Echo Lake Stream, above Pequannock River.	150					+	+
" "	Macopin Intake, inside Gatehouse.	600						
" "	Belleville Reservoir, inside Gatehouse.	170						
" "	Belleville Reservoir, outside Gatehouse.	130			-		+	+
" "	Board of Health Office, 880 Broad St.	110						
" "	Laboratory Faucet, City Hospital.	70						
May 12.	Head of Cobb Brook, near Green Pond.	330	—	+	+	+	+	+
" "	Head of Cobb Brook, near Green Pond.	180	+	+	+	+	+	+
" "	Oak Ridge Stream, above Clinton Stream.	680	+	+	+	+	+	+
" "	Clinton Stream, above Oak Ridge Stream.	1080	—	—	—	—	+	+
" "	R. R. Tower Stream, back of Brown's Hotel.	830	+	+	+	+	+	+
" "	Kanouse Creek, above Pequannock River.	430	+	+	+	+	+	+
" "	Echo Lake Stream, above Pequannock River.	320				+	+	+
" "	Macopin Intake, inside Gatehouse.	320				+	+	+
" "	Belleville Reservoir, inside Gatehouse.	200				+	+	+
" "	Belleville Reservoir, outside Gatehouse.	390	+	+	+	+	+	+
" "	Board of Health Office, 880 Broad St.	30				—		
" "	Laboratory Faucet, City Hospital.	335			+		+	+
May 28.	Head of Cobb Brook, near Green Pond.	930			+		+	+
" "	Head of Cobb Brook, near Green Pond.	1050		—	+		+	+

BOARD OF HEALTH

EXAMINATION OF PEQUANNOCK WATER DURING 1904 CONTINUED.

DATE. 1904	ORIGIN OF SAMPLE.	No. Bact. Per C. C.	Amount of Water Causing Fermenta- tion in 5 C. C. Glucose Bouillon.					
			$\frac{1}{2}$	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$	$\frac{1}{10000}$	$\frac{1}{100000}$
May 28	Oak Ridge Stream, above Clinton Stream.	1650	-	+	+	+	-	+
" "	Clinton Stream, above Oak Ridge Stream	1350	-	-	-	-	-	-
" "	R. R. Tower Stream, back of Brown's Hotel	2304	+	+	+	+	-	+
" "	Kanouse Creek, above Pequannock River.	2500	-	-	-	-	-	-
" "	Echo Lake Stream, above Pequannock River.	1600	-	+	-	-	-	-
" "	Macopin Intake, inside Gatehouse.	760	-	-	-	-	+	+
" "	Belleville Reservoir, inside Gatehouse	170	-	-	-	-	+	+
" "	Belleville Reservoir, outside Gatehouse	600	-	-	-	+	-	-
" "	Board of Health Office, 880 Broad St.	120	-	-	-	-	-	-
" "	Laboratory Faucet, City Hospital.	222	-	-	-	-	+	+
June 9.	Head of Cobb Brook, near Green Pond	530	-	-	-	+	+	+
" "	Head of Cobb Brook, near Green Pond	760	-	-	-	+	+	+
" "	Oak Ridge Stream, above Clinton Stream	1300	-	-	-	-	-	-
" "	Clinton Stream, above Oak Ridge Stream	70	-	-	-	-	-	-
" "	R. R. Tower Stream, back of Brown's Hotel	1630	+	+	+	+	-	+
" "	Kanouse Creek, above Pequannock River	1150	+	+	+	+	-	+
" "	Echo Lake Stream, above Pequannock River	1250	+	+	+	+	+	+
" "	Macopin Intake, inside Gatehouse.	1170	+	+	+	+	+	+
" "	Belleville Reservoir, inside Gatehouse	580	-	-	-	-	-	-
" "	Belleville Reservoir, outside Gatehouse	730	-	-	-	-	-	-
" "	Board of Health office, 880 Broad St.	90	-	-	-	-	-	-
" "	Laboratory Faucet, City Hospital.	60	-	-	-	+	+	+
June 22	Head of Cobb Brook, near Green Pond	570	-	-	-	-	+	+
" "	Head of Cobb Brook, near Green Pond	420	-	-	-	+	+	+
" "	Oak Ridge Stream, above Clinton Stream	1730	-	-	-	+	+	+

EXAMINATION OF PEQUANNOCK WATER DURING 1904 CONTINUED

41

DATE. 1904.	ORIGIN OF SAMPLE.	No. Bact Per C. C.	Amount of Water Causing Fermenta- tion in 5 C. C. Glucose Bouillon.					
			$\frac{1}{10}$	$\frac{1}{5}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{2}$
							C. C.	C. C.
June 22.	Clinton Stream, above Oak Ridge Stream .	1270			+		+	+
" "	R. R. Tower Stream, back of Broan's Hotel.	1460			+		+	
" "	Kanouse Creek, above Pequannock River	980						
" "	Echo Lake Stream, above Pequannock River .	1340				+		+
" "	Macopin Intake, inside Gatehouse.	133					+	
" "	Belleville Reservoir, inside Gatehouse	460						+
" "	Belleville Reservoir, outside Gatehouse . . .	420					+	+
" "	Board of Health office, 880 Broad St.	70						+
" "	Laboratory Faucet, City Hospital	60						
July 14.	Head of Cobb Brook, near Green Pond . . .	1450					+	
" "	Head of Cobb Brook, near Green Pond . .	1300			+		+	
" "	Oak Ridge Stream, above Clinton Stream .	2400	+			+	+	
" "	Clinton Stream, above Oak Ridge Stream .	1600				+	+	
" "	Kanouse Creek, above Pequannock River	6930	+			+	+	+
" "	Echo Lake Stream, above Pequannock River. .	330	+	+	+	+		+
" "	Macopin Intake, inside Gatehouse	2100		+	+	+		
" "	Belleville Reservoir, inside Gatehouse	560			+	+		
" "	Belleville Reservoir, outside Gatehouse . . .	510		+	+	+		
" "	Board of Health Office, 880 Broad St.	120						
" "	Laboratory Faucet, City Hospital.	170				+		
July 27.	Oak Ridge Stream, above Clinton Stream. . .	930					+	
" "	Clinton Stream, above Oak Ridge Stream	900				+	+	+
" "	Kanouse Creek, at Kanouse Farm.	3200	+	+		+	+	+
" "	Kanouse Creek, above Pequannock River. .	2700	+		+	+	+	+
" "	Echo Lake Stream, above Pequannock River.	2400				+		+

BOARD OF HEALTH

EXAMINATION OF PEQUANNOCK WATER DURING 1904—CONTINUED.

DATE. 1904.	ORIGIN OF SAMPLE.	No Bact Per C. C.	Amount of Water Causing Fermenta- tion in 5 C. C. Glucose Bouillon.					
			$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{2}$	$\frac{1}{2}$	1 C. C.	5 C. C.
July 27	Macopin Intake, inside Gatehouse.	470					+	+
" "	Belleville Reservoir, inside Gatehouse	630					+	+
" "	Belleville Reservoir, outside Gatehouse	860					+	+
" "	Board of Health office, 880 Broad St	240					+	+
" "	Laboratory Faucet, City Hospital.	110	—	—	—	—	+	+
Aug 16	Oak Ridge Stream, above Clinton Stream	160					+	+
" "	Clinton Stream, above Oak Ridge Stream.	270					+	+
" "	Kanouse Creek, at Kanouse Farm	1470	+	+	+	+	+	+
" "	Kanouse Creek, above Pequannock River	630	+	+	+	+	+	+
" "	Echo Lake Stream, above Pequannock River.	370				+	+	+
" "	Macopin Intake, inside Gatehouse	530	—	—	+	+	+	+
" "	Belleville Reservoir, inside Gatehouse	370					+	+
" "	Belleville Reservoir, outside Gatehouse	320					+	+
" "	Board of Health Office, 880 Broad St.	70	—	—			—	+
" "	Laboratory Faucet, City Hospital.	40					+	+
Aug. 31.	Oak Ridge Stream, above Clinton Stream	730			—		+	+
" "	Clinton Stream, above Oak Ridge Stream.	380					+	+
" "	Kanouse Creek, at Kanouse Farm	1400	+	+	+	+	+	+
" "	Kanouse Creek, above Pequannock River	1260			+	+	+	+
" "	Echo Lake Stream, above Pequannock River	830	—	—			+	+
" "	Macopin Intake, inside Gatehouse.	640	—	—	—	—	—	+
" "	Belleville Reservoir, inside Gatehouse	370	—	—			+	+
" "	Belleville Reservoir, outside Gatehouse	490	—	—		+	+	+
" "	Board of Health Office, 880 Broad st.	270					+	+
" "	Laboratory Faucet, City Hospital	210	—	—		—	—	+

BOARD OF HEALTH.

EXAMINATION OF PEQUANNOCK WATER DURING 1904—CONTINUED

45

DATE 1904	ORIGIN OF SAMPLE.	No. Bact. Per C. C.	Amount of Water Causing Fermenta- tion in 5 C. C. Glucose Bouillon.					
			$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{2}$	$\frac{1}{2}$	1 C. C.	5 C. C.
Sept. 15	Board of Health Office, 880 Broad St.	120						
" "	Laboratory Faucet, City Hospital.....	180	—	—	—	—	—	+
Sept. 27.	Oak Ridge Stream, above Clinton Stream	970					+	
" "	Clinton Stream, above Oak Ridge Stream	1520		+		+		+
" "	Kanouse Creek, above Pequannock River	1760			+			
" "	Echo Lake Stream, above Pequannock River	760		+		+		+
" "	Macopin Intake, inside Gatehouse	630		+	+		+	
" "	Belleville Reservoir, inside Gatehouse	470				+		
" "	Belleville Reservoir, outside Gatehouse.	500						+
" "	Board of Health Office, 880 Broad St.	210						
" "	Laboratory Faucet, City Hospital.....	160	—	—	+	+	+	+
Oct. 11.	Oak Ridge Stream, above Clinton Stream	1370	+	+	+			
" "	Clinton Stream, above Oak Ridge Stream	960		+	+		+	
" "	Kanouse Creek, above Pequannock River.	1280	+	+		+		+
" "	Echo Lake Stream, above Pequannock River	780			+		+	+
" "	Macopin Intake, inside Gatehouse	530		+	+		+	+
" "	Belleville Reservoir, inside Gatehouse	370				+		
" "	Belleville Reservoir, outside Gatehouse	410			+		+	
" "	Board of Health Office, 880 Broad St.	125						
" "	Laboratory Faucet, City Hospital.....	70	—	—	—	—	+	+
Oct. 25.	Oak Ridge Stream, above Clinton Stream	1480				+		
" "	Clinton Stream, above Oak Ridge Stream	472		+	+		+	+
" "	Kanouse Brook, above Pequannock River.	720			+	+	+	+
" "	Echo Lake Stream, above Pequannock River. . . .	320	+	+	+	+	+	+
" "	Macopin Intake, inside Gatehouse	600		+	+	+	+	+

BOARD OF HEALTH

EXAMINATION OF PEQUANNOCK WATER DURING 1904. CONTINUED.

DATE 1904.	ORIGIN OF SAMPLE.	No. Bact Per C. C.	Amount of Water Causing Fermenta- tion in 5 C. C. Glucose Bouillon.					
			$\frac{1}{10}$	$\frac{1}{5}$	$\frac{1}{2}$	$\frac{1}{1}$	$\frac{1}{1}$ C. C.	$\frac{3}{1}$ C. C.
Oct. 25.	Belleville Reservoir, inside Gatehouse	270	-	-	-	-	-	-
" "	Belleville Reservoir, outside Gatehouse	370	-	-	-	-	-	-
" "	Board of Health Office, 880 Broad St	40	-	-	-	-	-	-
" "	Laboratory Faucet, City Hospital.	90	-	-	-	-	-	-
Nov. 22	Oak Ridge Stream, above Clinton Stream	370	-	-	-	-	-	-
" "	Clinton Stream, above Oak Ridge Stream	420	-	-	-	-	-	-
" "	Kanouse Creek, above Pequannock River.	630	-	-	-	-	-	-
" "	Leno Lake Stream, above Pequannock River.	500	-	-	-	-	-	-
" "	Macopin Intake, inside Gatehouse	640	-	-	-	-	-	-
" "	Belleville Reservoir, inside Gatehouse	230	-	-	-	-	-	-
" "	Belleville Reservoir, outside Gatehouse	260	-	-	-	-	-	-
" "	Board of Health Office, 880 Broad St	160	-	-	-	-	-	-
" "	Laboratory Faucet, City Hospital.	70	-	-	-	-	-	-
Dec. 20.	Oak Ridge Stream, above Clinton Stream	70	-	-	-	-	-	-
" "	Kanouse Creek, above Pequannock River	210	-	-	-	-	-	-
" "	Macopin Intake, inside Gatehouse	170	-	-	-	-	-	-
" "	Belleville Reservoir, inside Gatehouse	30	-	-	-	-	-	-
" "	Belleville Reservoir, outside Gatehouse	80	-	-	-	-	-	-
" "	Board of Health Office, 880 Broad St	20	-	-	-	-	-	-
" "	Laboratory Faucet, City Hospital.	160	-	-	-	-	-	-

BOARD OF HEALTH

AVERAGE NUMBER OF BACTERIA FROM MACOPIN INTAKE TO CITY FAUCETS.

For 1904	Macopin Intake.....	662	Bacteria per C. C.		
" "	Belleville Reservoir, inside Gatehouse	343	"	"	"
" "	Belleville Reservoir, outside Gatehouse.	435	"	"	"
" "	Board of Health Office, 880 Broad St.....	112	"	"	"
" "	Laboratory Faucet, City Hospital	117	"	"	"

BOARD OF HEALTH.

Very respectfully,

R. N. CONNOLLY, M. D.,
Bacteriologist.

REPORT OF SUPERINTENDENT BUREAU OF CONTAGIOUS DISEASES.

Mr. David D. Chandler, Health Officer:

DEAR SIR I have the honor to present the following report of the work of the Bureau of Contagious Diseases for the year 1904:

OUR POPULATION.

Our estimate for 1904 is fixed at 272,000, this estimate being merely an approximate one. The population is distributed in 15 wards, as follows

WARD	POPULATION
1	15,533
2	15,398
3	23,098
4	12,839
5	11,831
6	19,549
7	11,259
8	15,279
9	13,814
10	20,041
11	20,360
12	18,640
13	22,922
14	25,087
15	16,350
Total	272,000

THE DEATH RATE.

The death rate for 1904 is fixed at 19.77 per thousand, there being 5,378 deaths. The following tables compare these rates for the past eleven years. It is higher than last year :

YEAR.	POPULATION.	NO. OF DEATHS.	DEATH RATE.
1894	203,923	4,543	22.28
1895	215,725	4,616	21.37
1896	225 000	4,716	20.96
1897	230 000	4,010	17.43
1898	235 000	4,303	18.30
1899	240,000	4,537	18.90
1900	246,070	5,006	20.34
1901	250 000	4,806	19.22
1902	255 000	4,943	19.38
1903	266 000	4,923	18.50
1904	272 000	5,378	19.77

SCARLET FEVER.

During the year 1904 we had reported 1,649 cases and 120 deaths. Death rate, 7.3 10 per cent. Comparing with the previous years, we have:

YEAR.	CASES.	DEATHS.
1894	1,145	69
1895	623	35
1896	537	17
1897	1,358	54
1898	478	15
1899	607	34
1900	708	55
1901	643	23
1902	557	46
1903	779	71
1904	1,649	120

Average mortality for 11 years, 5.9-10 per cent.

AGE—SCARLET FEVER.

Cases under 5 years	523	31.7 per cent.
Cases 5 to 10 years	782	47.4 "
Cases 10 to 15 years	243	14.7 "
Cases 15 to 20 years	55	3.3 "
Cases 20 to 40 years	46	2.8 "

Total 1,649

REPORTED CASES AND DEATHS BY MONTHS

MONTH.	CASES.	DEATHS.
January	158	14
February	158	15
March	179	15
Apr. 1	164	14
May	163	15
June	144	10
July	79	9
August	107	10
September	83	0
October	135	5
November	135	5
December	144	8

Total 1,649 120

TYPHOID FEVER.

During 1904 we had reported 210 cases and 40 deaths, a mortality of 19.4-100. Comparing previous years, we have:

YEAR.	CASES.	DEATHS.
1894	89	34
1895	149	50
1896	106	47
1897	103	33
1898	179	41
1899	515	66
1900	320	50
1901	316	57
1902	259	47
1903	306	63
1904	210	40

Average mortality for 11 years, 20.7-10 per cent.

TYPHOID FEVER CASES AND DEATHS BY MONTHS.

MONTH	CASES	DEATHS.
January	10	3
February	15	4
March	12	3
April	15	3
May	8	1
June	11	2
July	22	1
August	17	6
September	27	2
October	27	4
November	26	7
December	20	4
Total for 1904	210	40

SMALL POX.

We are fortunate in this disease. We had one imported case, which made a good recovery. A large number of suspects were reported. The record of vaccinations, taking the City Dispensary as a standard, is below what should be expected. It is not in accordance with our increase in population. It means that there is an accumulation of unvaccinated persons in our city. These furnish the material for another outbreak.

VACCINATIONS AT CITY DISPENSARY -1904

January	72
February	55
March	203
April	235
May	504
June	255
July	132
August	950
September	2,400
October	405
November	212
December	132
Total vaccinations	5 555

VACCINATIONS

1901		38,288
1902		26,043
1903		4,671
1904		5,555
		<hr/> 74,557

SMALL POX.

YEAR.	CASES	DEATHS.
1894 .	131	18
1895 ...	13	2
1896 ..	0	0
1897 ..	0	0
1898 ..	0	0
1899	22	0
1900 .	15	1
1901 .	387	71
1902 ..	901	187
1903 ...	25	3
1904 .	1	0

DIPHTHERIA.

During 1904 there were reported 1,653 cases and 150 deaths, a mortality of 9 per cent.

DIPHTHERIA CASES AND DEATHS.

YEAR.	CASES.	DEATHS.
1895 ..	1,321	273
1896 .	1,261	218
1897	969	137
1898	1,019	133
1899	1,170	124
1900	1,417	143
1901 ..	1,154	103
1902	985	105
1903 ..	1,150	120
1904	1,653	150

DIPHTHERIA (ANTITOXIN USED).

YEAR	CASES	DEATHS.	PERCENTAGE.
1895	384	52	13
1896	905	106	11
1897	563	61	11
1898	646	68	10 1-2
1899	798	70	8 77-100
1900	987	80	8 1-10
1901	956	58	6 6-100
1902	775	61	7
1903	953	71	7 4-10
1904	1,399	95	6 7-10+

DIPHTHERIA (ANTITOXIN NOT USED).

YEAR.	CASES	DEATHS.	PERCENTAGE.
1895	937	221	23
1896	356	112	31
1897	406	76	19
1898	373	65	17 1-2
1899	372	54	14 1-2
1900	430	63	14 6-10
1901	198	45	22 7-10
1902	210	44	19
1903	197	49	24 87-100
1904	254	55	21 65-100

DIPHTHERIA (REPORTED CASES BY MONTHS)

MONTH.	CASES.	DEATHS.
January	133	13
February	100	16
March	89	14
April	88	4
May	77	6
June	88	10
July	110	17
August	109	12
September	175	11
October	199	10
November	275	19
December	210	18
Total for 1904	1,653	150

VITAL STATISTICS.

The following is a summary of the chief statistics kept:

DEATHS—1904.

Total deaths	5,378
Tuberculosis	775
Diphtheria	150
Scarlet Fever	120
Typhoid Fever	40
Small Pox	0
Whooping Cough	13
Measles	39
Tetanus	8

BIRTHS—1904

White	6,889
Colored	147
	<hr/>
	7,036

Rate per thousand—25.8.

MARRIAGES -1904

White	2,736
Colored	99
	<hr/>
	2,835

Rate per thousand -10.4.

STILL BIRTHS—1904.

White	392
Colored	24
Not stated	0
	<hr/>
Total	422

Rate per thousand—1.55

DEATHS BY SEX—1904.

Males	2,955
Females	2,423
	<hr/>
Total ..	5,378

DEATHS BY COLOR.

White	5,120
Colored	257
Mongolian	1
Total	5,378

DEATHS IN INSTITUTIONS AND PUBLIC PLACES

Newark City Hospital .	396
St. Michael's Hospital ..	311
St. James' Hospital .	75
St. Barnabas' Hospital .	91
Essex County Hospital for Insane ..	79
German Hospital . . .	48
Babies' Hospital	65
Little Sisters of the Poor .	49
Alms House	46
City Ambulance . . .	9
Baptist Home	3
Home for Crippled Children .	1
Florence Crittenden House ..	2
Beth Israel Hospital .	18
Home for Incurables ..	8
St. Peter's Orphan Asylum .	1
Women's and Children's Hospital .	10
Convent of the Good Shepherd .	5
Planters' Home . .	1
Krueger Home	1
Eye and Ear Infirmary . .	2
Women's Home, Central Avenue .	1
Homeopathic Hospital .	1
Arlington Hotel ...	1
Waverly Park Hotel .	1
Willard Hotel	1
Eighth Ave. Day Nursery .	1
Second Precinct Station .	1
Coleman House	1
St. Vincent's Academy .	1
Emergency Hospital .	1
Brooks' Nursery . . .	3
Colored Aged Home	1

BOARD OF HEALTH.

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Home for Aged Women	3
Forest Hill Depot	1
Total	<hr/> 1,239

23 per cent. of total mortality 1904, or 4.55 per thousand of death rate.

[TABLE NO. I.]
BIRTHS REPORTED FOR THE YEAR 1904

COLOR	SEX.	NATIVITY OF PARENTS.						NAME OF CHILD.	LEGITIMACY
		Not Stated.	Native.	Foreign.	Foreign Father only	Foreign Mother only.	Nativity of Father only Stated.		
White.									
Colored.									
Male.									
Female.									
Not Stated.									
Native.									
Foreign.									
Foreign Father only									
Foreign Mother only.									
Native.									
Foreign.									
Native.									
Foreign.									
Not Stated.									
Stated.									
Not Stated.									
Legitimate.									
Illegitimate.									
Total.									

[TABLE NO. II.]
STILL BIRTHS REPORTED FOR THE YEAR 1904

SEX.	FATHER.			MOTHER.			COLOR.		
	Male.	Female.	Not Stated.	Native.	Foreign.	Not Stated.	Native.	Foreign.	Not Stated.
Male.									
Female.									
Not Stated.									
Native.									
Foreign.									
Not Stated.									
Native.									
Foreign.									
Not Stated.									
White.									
Colored.									
Not Stated.									
Total.									

[TABLE NO. III.]
MARRIAGES FOR THE YEAR 1904.

NATIVITY.																					
White.		Colored		Native.		Foreign		Not Stated.		First Marriage.		Second Marriage.		Third Marriage.		Fourth Marriage.		Not Stated.			
Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Total.	
2736	2736	99	99	1630	1717	1263	1103	2	15	2548	2533	261	279	17	8	0	2	9	13	2835	

MORTUARY REPORT.

Total deaths, 5,378—on a population of 272,000. Principal causes of death:

SPECIFIC INFECTIOUS.			
Diphtheria.....	139}	(a) Acute	4
Membranous Croup, 11}	150	(b) Chronic	5
Scarlet Fever	120	(c) Arthritic . . .	1
Typhoid	40	Diabetes	29
Influenza, 3}		Rickets	4
LaGrippe, 22}	25	CIRCULATORY.	
Small Pox	0	Pericardial	5
Measles	39	Endocardial . . .	199
Whooping Cough	13	Myocardial	19
Cer. Sp. Meningitis	51	Valvular	126
Erysipelas	25	Hypertrophy . . .	6
Septicæmia	31	Dilatation	26
Pyæmia	5	Neurosis	1
Dysentery	43	Angina Pectoris . .	12
Malarial Fever	6	Fatty Degeneration .	15
Remittent	3	Coronary Arteries ..	2
Tetanus	8	Other Diseases	37
Syphilis	10	ALIMENTARY TRACT.	
Tuberculosis	44	Mouth	2
(a) Pulmonary . . .	51	Stomach	17
(b) Lymphatics	2	Cancer	174
(c) Serous Memb.	14	Gastritis, acute	14
(d) Osseous	7	Gastritis, chronic ..	11
(e) Larynx	6	Stomach, ulcer	2
(f) Brain and Cord ..	51	Enteritis	160
Other conditions	2	Diarrhœa	6
DEVELOPMENTAL.		Cholera, infant	107
Cyanosis	22	Colitis	21
Marasmus	154	Enterocolitis	66
Inanition	67	Appendicitis . . .	31
Semility	81	Typhlitis and Perityph. .	1
Tumors	18	Strangulation, bowel .	9
Other conditions	13	Obstruction, bowel . .	36
CONSTITUTIONAL.		Liver Diseases	78
Rheumatism	5	Pancreas Diseases	1
		Peritoneum Diseases	38
		Surg. Diseases	6

RESPIRATORY

Laryngitis	1
Œdema Larynx ..	3
Catarrhal Laryngitis ..	3
Bronchitis, acute ..	80
Bronchitis, chronic ..	66
Broncho, Pneumonia ..	136
Capillary Bronchitis ..	23
Pneumonia	495
Pleurisy, acute ..	10
Pleurisy, chronic ..	3
Empyema	11
Asthma	26
Other Diseases ..	31
Surgical Diseases ..	2

GENITO URINARY TRACT

Nephritis (Bright's)—	
(a) Acute ..	68
(b) Chronic ...	234
Pyelonephritis ..	2
Uræmia	55
Uræmic Convulsions	1
Eclampsia	1
Surg. Diseases	14
Other Diseases ..	1

PUERPERAL ACCIDENTS

Puerperal Fever ..	19
Eclampsia ..	5
Placenta Prævia ..	2
Hæmorrhage	6
Emboli and Thrombi ..	10
Premature Birth ..	123
Still Birth ..	1
Other conditions ..	19
Surgical Diseases ..	4

TOXAEMIAS

Alcohol	44
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Lead	2
Arsenical, 1+1 Suicides ..	2
Ill. Gas, 14+8 Suicides ..	22
Carb. Acid, 4+26 Suicides ..	30
Ptomaines	1

BLOOD AND DUCTLESS GLANDS

Anæmia	1
Anæmia, pernicious ..	8
Leukæmia	3
Hodgkin's Disease ..	1
Goitre	2
Surg. Diseases ..	1

NERVOUS SYSTEM.

BRAIN AND SPINAL CORD

Meningitis	129
Apoplexy	241
Paralysis	36
Neuritis	5
Hemiplegia	20
Brain, softening ..	8
Brain, hæmorrhage	1
Brain, tumors	8
Paralysis Agitans ..	5
Convulsions, infant ..	110
Epilepsy	6
Surg. Diseases ..	8
Other Diseases ..	11

UNCLASSIFIED

Accidents ..	160
Suicides ..	26
Homicide ..	5
Gangrene ..	12
Exhaustion ..	10
Other cases ..	28
Total ..	5,378

CONTAGIOUS DISEASES REPORTED BY
WARDS, 1904.

Wards	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Small- Pox.
1	76	44	19	
2	46	61	10	
3	184	67	22	
4	65	67	11	
5	95	198	5	
6	103	93	18	
7	101	69	8	1
8	65	87	23	
9	58	61	9	
10	79	284	8	
11	132	96	22	
12	106	148	8	
13	130	146	12	
14	234	138	14	
15	175	94	21	
Total.	1,649	1,653	210	1

Respectfully submitted,

EDWARD E. WORL, M. D.,
Supt. Bureau Contagious Diseases.

Mr. David D. Chandler, Health Officer.

DEAR SIR -I herewith submit the annual report of the Chemist for the year ending December 31, 1904.

MILK.

The examination of the milk supplied to the citizens of Newark has been continued on practically the same lines as last year. The importance of this particular branch of food inspection is universally recognized and continues to be the principal work of food and drug laboratories in other places as it has in ours. Although the total number of samples analyzed was not as great as last year, there were more convictions and fines for the selling of milk below the standard.

The analyses are given in the following tables arranged in classes as formerly. The comparison table given has been continued to date and shows the number of samples analyzed, the percentage in the different classes and average qualities for past years.

CLASSIFIED TABLE OF MILK ANALYSES.

192 Samples having a percentage of Total Solids of 12.50 and over. Average for Solids, 13.672
Average for Fat, 4.053.

Solids	Fat	Solids	Fat	Solids	Fat	Solids	Fat	Solids	Fat	Solids	Fat
12.82	3.80	12.72	3.50	12.90	4.00	12.55	3.50	12.55	4.10	13.12	4.40
13.47	4.40	13.05	3.75	13.82	4.40	13.50	4.40	12.74	3.75	12.88	4.15
13.18	3.90	13.45	3.85	13.05	3.90	13.25	4.30	12.77	3.60	12.91	4.50
14.00	4.25	13.00	4.20	13.36	3.90	13.24	4.25	13.49	4.50	12.85	3.60
13.70	4.40	12.75	3.75	12.50	3.05	13.14	4.00	12.09	3.80	13.73	4.20
13.26	4.20	12.57	4.00	12.95	3.70	13.26	4.25	12.93	3.00	12.54	3.70
13.04	4.10	13.30	4.30	12.34	3.40	13.16	4.00	12.58	3.95	14.79	5.70
12.97	3.60	13.20	4.20	13.17	4.10	12.60	3.80	12.95	3.80	13.35	4.20
13.03	3.50	12.92	4.10	13.14	4.05	12.51	3.90	13.33	3.20	12.76	3.00
12.94	3.25	13.76	4.00	12.90	4.20	13.14	4.25	13.16	4.10	13.60	4.50
13.07	3.80	13.03	4.00	12.85	4.15	13.12	4.30	13.00	4.00	12.66	4.00
13.23	3.90	12.87	3.80	13.11	4.10	12.68	3.80	13.05	3.75	13.00	4.30
13.78	4.40	12.34	3.40	12.94	3.70	12.90	4.20	12.65	3.00	12.90	4.15
13.02	4.75	12.56	3.70	13.46	4.40	13.20	4.80	12.32	3.35	12.97	3.90
13.25	4.00	13.47	4.15	13.51	4.00	12.72	3.70	13.34	4.40	12.70	3.70
13.51	3.65	13.08	4.20	12.52	3.80	12.74	3.75	13.24	4.10	12.77	3.95
13.74	4.50	12.70	4.05	12.89	4.20	12.50	4.00	12.98	4.20	12.98	4.15
12.79	3.40	12.54	3.80	13.73	4.60	12.57	3.70	12.87	3.80	14.70	5.80
13.08	4.00	13.13	3.55	12.70	3.90	12.74	4.50	13.02	3.75	14.00	4.55
12.60	3.25	13.60	3.60	12.52	3.90	13.32	4.50	12.68	3.95	12.32	3.70
12.79	4.50	12.78	3.70	12.06	3.60	12.87	4.35	13.05	3.90	13.45	4.00
13.14	4.35	12.80	3.90	12.84	3.50	12.93	4.00	12.77	4.00	12.89	3.80
12.59	4.00	12.93	3.55	12.55	3.90	12.87	4.35	12.64	3.80	13.56	4.00
12.65	4.15	13.35	4.10	13.38	8.00	12.97	3.75	13.81	4.80	13.12	4.00

CLASSIFIED TABLE OF MILK ANALYSES CONTINUED.

192 Samples having a percentage of Total Solids of 12.50 and over. Average for Solids, 13.072.
Average for Fat, 4.053.

Solids	Fat	Solids	Fat	Solids	Fat.	Solids	Fat	Solids.	Fat.	Solids.	Fat
12.92	3.90	12.66	3.80	12.64	3.70	13.34	4.35	13.21	4.30	13.12	3.80
13.18	4.05	12.60	3.80	12.81	4.00	13.00	4.25	13.41	4.15	12.74	3.85
13.50	4.60	13.23	3.80	13.06	4.20	12.90	3.90	13.82	4.60	13.15	4.10
13.20	3.80	12.58	3.80	12.95	4.10	12.84	4.30	12.54	3.50	13.28	4.25
13.86	4.80	12.93	4.00	12.96	4.20	13.03	4.20	13.17	4.00	13.43	4.50
13.00	4.00	12.94	3.80	12.93	3.60	12.84	3.45	13.82	4.10	13.34	4.50
13.19	3.60	12.53	3.40	13.95	5.10	12.60	4.10	12.83	3.85	13.41	4.45
13.07	3.50	13.26	4.20	12.93	4.00	12.96	3.90	13.98	4.50	13.02	4.35

CLASSIFIED TABLE OF MILK ANALYSES—CONTINUED.

97 Samples having a percentage of Total Solids between 12.00 and 12.50

Average for Solids, 12.258. Average for Fat, 3.661.

Solids.	Fat.	Solids.	Fat.	Solids.	Fat.	Solids.	Fat.	Solids.	Fat.	Solids.	Fat.
12.47	3.40	12.00	3.90	12.25	3.60	12.00	2.75	12.47	3.50	12.28	3.80
12.27	4.25	12.40	3.90	12.11	3.80	12.40	3.40	12.40	4.55	12.02	3.30
12.32	3.25	12.00	3.80	12.00	3.60	12.00	3.60	12.49	4.20	12.00	3.60
12.46	2.30	12.40	3.60	12.22	3.80	12.30	3.50	12.11	3.80	12.45	3.60
12.42	3.30	12.30	3.60	12.19	3.40	12.48	3.90	12.00	3.60	12.47	3.75
12.16	3.20	12.35	4.05	12.32	3.50	12.47	4.00	12.35	3.80	12.02	3.40
12.24	3.47	12.34	3.70	12.23	3.85	12.10	3.60	12.22	4.10	12.30	3.80
12.05	3.15	12.14	3.05	12.42	3.40	12.48	3.35	12.36	3.40	12.31	3.70
12.07	3.30	12.40	3.80	12.44	3.70	12.30	4.15	12.00	3.80	12.30	3.60
12.17	3.30	12.02	3.75	12.26	3.50	12.01	3.70	12.36	3.50	12.07	3.70
12.46	3.70	12.34	3.50	12.30	3.50	12.47	3.60	12.00	3.70	12.27	3.60
12.48	3.60	12.36	3.40	12.47	3.90	12.49	3.45	12.49	3.85	12.28	4.40
12.20	3.20	12.08	3.15	12.06	3.40	12.12	3.80	12.16	3.70	12.27	3.65
12.02	3.20	12.40	3.80	12.48	3.75	12.22	3.80	12.38	3.65	12.36	3.10
12.42	3.90	12.20	3.60	12.85	3.60	12.01	3.70	12.16	3.50	12.44	3.80
12.35	4.10	12.34	3.70	12.03	3.10	12.47	3.95	12.42	3.25	12.14	3.00
...	...	...	...	...	...	...	...	...	...	12.00	3.65

CLASSIFIED TABLE OF MILK ANALYSES—CONTINUED.

63 Samples having a percentage of Total Solids below 12.0 %. Average for Solids, 11.254.
Average for Fat, 3.102.

Solids.	Fat.	Solids.	Fat.	Solids.	Fat.	Solids.	Fat.	Solids.	Fat.	Solids.	Fat.
11.12	3.10	11.77	3.45	10.94	3.00	11.60	3.20	11.89	3.00	11.61	3.40
6.90	3.60	11.57	3.60	11.19	3.55	9.75	2.00	11.70	3.75	11.45	2.90
10.65	3.40	11.02	2.90	11.40	3.05	10.98	2.60	10.47	1.90	11.40	2.90
11.56	3.60	11.45	2.85	11.87	3.60	10.95	....	11.48	3.20	11.21	2.90
11.21	2.70	11.05	3.00	11.52	3.65	11.73	3.10	11.86	3.00	11.68	2.90
11.82	3.70	11.71	3.40	11.16	3.20	11.61	2.40	11.47	2.60	10.85	2.95
11.72	3.80	11.03	3.30	11.67	3.30	11.92	3.15	10.33	2.50	11.92	3.30
9.53	2.90	10.57	3.20	11.76	3.35	11.91	4.00	11.21	3.40	11.40	2.35
10.67	2.80	10.62	3.00	11.80	2.35	11.51	3.20	11.70	3.50	11.72	3.60
11.74	2.80	10.39	2.60	11.83	3.40	11.86	3.50	11.61	3.30	11.38	3.50
11.87	3.35	11.30	3.10	10.44	1.75	....	....	....	....	....	....

COMPARISON TABLE.

Year		1897	1898	1899	1900	1901	1902	1903	1904
Number of samples analyzed		136	178	221	283	293	330	465	352
1st class	Percentage of samples	69.12	70.23	72.40	65.37	63.82	58.18	62.80	54.55
	Average % of total solids	13.24	13.24	13.06	13.24	13.10	13.18	12.97	13.07
	Average % of fat			3.95	4.00	4.01	4.16	3.88	4.05
2d class	Percentage of samples	21.32	14.15	15.38	21.55	22.87	27.88	21.29	27.56
	Average % of total solids	12.23	12.35	12.25	12.25	12.25	12.25	12.25	12.26
	Average % of fat			3.60	3.56	3.52	3.55	3.50	3.60
3d class	Percentage of samples	19.56	15.73	12.22	13.07	13.31	13.94	15.91	17.89
	Average % of total solids	11.61	11.58	11.48	11.56	11.82	11.44	11.51	11.25
	Average % of fat			3.11	3.25	3.08	3.13	3.18	3.10
General average % of total solids		12.87	12.82	12.75	12.77	12.70	12.64	12.60	12.52
General average % of fat				3.80	3.85	3.75	3.81	3.68	3.75

COMPARISONS.

Compared with the results of previous years it will be observed that the percentage of samples in the first class is smaller, and in the third class, larger. This does not mean a change for the worse in the general quality of the milk, but rather a greater effort on the part of the inspectors to find adulterated samples.

The same remarkable uniformity for the percentage of Total Solids in milk of the second class continues.

MILK INSPECTION.

Sanitary control of the milk supply is being practiced by an increasing number of local Boards of Health in the smaller municipalities in this State and elsewhere, in addition to the general supervision by the state authorities. The scope of this inspection is generally being enlarged and a thorough knowledge of the conditions of sanitary cleanliness under which milk is produced, which directly affect the kind and quality of the bacterial content, and medical inspection of the cattle are probably the most important features. However, prevention of adulteration by skimming and watering is also of extreme importance, not only to stop commercial fraud, but to prevent the entrance of bacteria which always occurs in either form of sophistication. In the case of dilution with polluted well-water, so often found near the dairy, the results would be especially dangerous.

The license now required by dealers and the check it affords on the sanitary conditions at the dairy is a most useful part of the system, but it would be more valuable if the local officers had authority to go outside of the city limits to inspect the dairies and see that they conform to proper sanitary rules.

STANDARDS.

The only definite standard fixed by law, apart from general purity, wholesomeness, etc., is twelve per cent. of Total Solids. Milk containing less, although not necessarily adulterated in all cases, is of inferior quality, as the standard is about the lowest limit and does not represent the average solids in ordinary milk, about 60 per cent. of which, our table shows, contains over 13 per cent. and over 4 per cent. of Fat.

It has been often urged that our law should also require 3 per cent. of Fat. While such a requirement would be desirable, it is not of such very great importance at the present time, from the fact that it is now very rare to find a milk which is above the standard of 12 per cent. of Total Solids to contain less than 3 per cent. of Fat. The milkman who fraudulently skims milk chooses a rich product to operate on and then only partially skims, so that after he has removed perhaps one third of the cream there is still more than 3 per cent. of Fat left.

PRESERVATIVES.

Although formaldehyde is the preservative par excellence for milk, it was only found in one of all the samples analyzed last summer. Owing to the vigorous action of the authorities the use of preservatives in milk in this State has been much less than formerly. However, there are certain classes of food in which they are constantly used, and the manufacturers claim that it would be practically impossible to put these on the market to suit the demands of the purchaser without them.

The exact effect upon the human system of food preservatives has never been ascertained, but the series of experiments now being carried on by the U. S. Government officials for the purpose of determining this question are being followed with much interest and valuable information is expected.

WELL WATER.

A considerable number of surface wells are still in use in the city for furnishing drinking water. These are mostly in the outlying and recently annexed districts, and in some cases where there is no other supply available. These wells as a class are very dangerous. Besides these there are a good many so called artesian wells, varying from 100 to 500 feet in depth, which are used by factory employees and others. Although much of this deep well-water shows evidence of previous contamination, natural purification has made most of it apparently safe for potable use, but occasional exceptions prove the need of constant supervision.

CITY AQUEDUCT WATER.

No unusual change has occurred in the character of the city water in 1904. When the yearly average is compared with those of former years a slight advantage is indicated.

Although we have an excellent water supply from a good source, it is obvious that if every heavy rainfall or thaw results in water made turbid by the washings from the banks of the streams in the watershed, conditions might occur which would cause some apprehension. The use of the new storage reservoir at Cedar Grove, so long delayed but now nearly completed, will doubtless be a larger factor in reducing color, turbidity and any possible danger from bacterial pollution.

The results of the monthly analyses and the yearly averages are given in the following table:

ANALYSES OF NEWARK AQUEDUCT WATER

(PARTS PER 100,000.)

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Date, 1901	Free Ammonia	Albuminoid Ammonia	Chlorine	Nitrogen as Nitrates	Nitrogen as Nitrates	Temporary Hardness	Total Sol. ds.	Loss on Ignition	Fixed Mineral Residue	Color	Temperature, degrees F.
Jan. 23	.0010	.0070	.15	None	.012	2.20	4.24	2.00	2.24	25	35
Feb. 20	.0011	.0107	.15	"	.012	1.50	3.82	2.00	1.82	25	36
Mar. 21	.0017	.0080	.20	"	.005	1.40	3.50	1.40	2.10	.30	39.5
Apr. 20	.0002	.0070	.15	"	.001	2.31	4.05	2.51	2.54	.33	45
May 20	Trace	.0105	.15	"	Trace	2.00	3.85	1.70	2.15	.25	59
June 20	.0008	.0105	.15	"	.010	2.00	4.80	1.90	2.90	.25	69
July 22	.0004	.0070	.20	"	.008	2.00	4.50	1.45	3.05	.30	73
Aug. 17	.0010	.0140	.20	"	.010	1.80	3.75	1.25	2.50	.25	70
Sept. 20	.0110	.0105	.12	"	.008	2.40	4.05	2.55	2.50	.25	66
Oct. 20	.0004	.0100	.20	"	Trace	2.50	4.40	1.30	3.10	.28	76
Nov. 22	.0004	.0010	.15	"	.008	2.30	4.70	1.80	2.90	.25	43
Dec. 21	None	.0084	.20	"	.015	2.70	5.00	2.50	2.50	.35	34
Average.											
1901 ..	.00086	.00922	.168	"	.008	2.14	4.32	1.80	2.52	.300	52.1
1903 ..	.00108	.0105	.141	"	.009	2.00	3.973	1.523	2.45	.247	54.5
1902 ..	.00178	.0131	.165	"	.0089	2.041	4.19	1.872	2.317	.258	54.2
1901 ..	.00252	.0154	.155	"	.0148	2.20	4.653	1.916	2.737	.320	53.5
1900 ..	.00242	.0137	.181	Trace	.0142	2.092	4.433	1.991	2.442	.286	56
1899 ..	.00226	.0128	.167	"	.0057	1.771	4.457	1.878	2.579	.305	..
1898 ..	.0026	.0150	.142	"	.0125	1.42	4.42	2.05	2.37	.348	..
1897 ..	.0022	.0141	.133	"	.0112	1.12	4.12	1.99	2.13	.390	..

BOARD OF HEALTH.

TOTAL SOLIDS (GRAINS PER U. S. GALLON).

	1900.	1901.	1902.	1903	1904
Maximum	3.06	3.00	2.92	2.92	2.92
Minimum	1.96	1.93	1.98	1.69	2.04
Average for twelve months	2.53	2.68	2.45	2.32	2.52

MISCELLANEOUS.

One of the most interesting questions arising in the year was that of the use of Methyl or wood alcohol as a substitute for Ethyl or grain alcohol. Seventeen samples of cheap whisky, brandy, gin, etc. were tested for wood alcohol and none found, but farther examination showed that they were all made by mixing alcohol, water, artificial flavors and color. A whisky containing as much alcohol as a first-class article could be made in this way for about thirty five cents a quart, but by the use of wood alcohol the cost could be reduced to less than one-half.

Popular sentiment was aroused on the subject on account of two or three deaths in another city, which were apparently caused by wood alcohol in whisky, but such information as can be obtained goes to show that whisky of that kind is not very common and may be the result of ignorance when it does occur. The examination of tinctures and extracts in other cities has shown that in their preparation wood alcohol is sometimes substituted for grain. The use of wood alcohol in any article intended for internal use is dangerous and should be strictly prohibited.

Some strawberry jelly was analyzed and found to be apple pulp, glucose and aniline color with no strawberry. This is a type of a large number of similar preparations on the market which deceive the public, but which are probably not very injurious to health.

Two samples of condensed milk were found deficient in fat. These were evidently the result of the common practice of a number of manufacturers of using partly skimmed milk for the preparation of this article.

Two samples of lithia water were analyzed and no lithia found.

Four samples of ice, two spring waters and five special samples of water from the watershed were analyzed.

Two bottles of citrate of magnesia were found to contain the proper ingredients

In addition to the above there were a number of partial examinations and tests made and verbal reports made thereon.

Very respectfully submitted,

HERBERT B. BALDWIN,

Chemist.

WELLS RECORDED.

Location of Wells.	Sample No.	Kind and Depth.	For Manuf'g or Domestic Purposes	PRIVY VAULT AND CESS-POOL WITHIN.			Result of Analysis.
				30 ft.	50 ft.	100 ft.	
Market St., 536	853	Bucket.....	Domestic.	....	1 C. P	....	Badly contaminated.
Ogden St., 379..	854	Cistern, 15 ft.	"	....	1 C. P	1 P. V	Contaminated
Hunterdon St., 827.	855	Bucket, 25 ft....	"	....	1 P. V	....	Badly contaminated.
Hunterdon St., 839.	856	Artesian, 75 ft....	"	....	1 P. V	....	Suspicious.
Hunterdon St., 857	857	Artesian, 105 ft.	"	....	1 C. P	....	Passable.
Hunterdon St., 920	858	Cistern, 10 ft	"	1 P. V	1 P. V	....	Contaminated.
Hawthorne Ave., 226 & 228	859	Artesian, 40 ft.	"	....	....	1 P. V	"
Hawthorne Ave., 196..	860	Bucket. ....	"	....	1 P. V	1 C. P	"
Frelinghuysen Ave., 140	861	Artesian, 245 ft.	"	....	....	....	Passable.
Frelinghuysen Ave., 150	862	Pump.....	"	....	2 P. Vs.	....	Badly contaminated.
Jefferson St., 58 & 60.	863	Open Well, 8 ft..	"	1 P. V	....	....	Contaminated.
Chestnut St., 234	864	Bucket, 40 ft.	"	1 C. P	....	....	"
Seventh Ave., 33.	865	Open Well, 12 ft..	"	....	1 P. V	....	Badly contaminated.
Goble St., 10.	866	Pump.. .	"	....	1 C. P.	....	"
Elizabeth Ave., 359	867	Artesian	"	1 C. P.	1 P. V.	....	Suspicious.
Shipman St., 78	868	Pump . . .	"	1 P. V.	....	....	"
Elizabeth Ave., 375							Contains decomposing organic matter, but no sewage matter.
E. Kinney St., 395 ..	869	Pump . . .	"	1 P. V	....	....	Badly contaminated.
Vanderpool St., 189	870	Open Well, 9 ft.	"	1 P. V	....	....	Suspicious.
Oliver St., 220. . .	871	Open Wel.	"	1 P. V	....	....	"
Bonykamper Ave., 73	872	Open Well, 20 ft	"	1 P. V	....	....	Badly contaminated.
Bonykamper Ave., 73	873	Pump, 10 ft. . .	"	1 P. V	....	....	Chemically of good quality.

NEWARK WEATHER IN THE YEAR 1904.

To D. D. Chandler, Health Officer:

The year 1904 was the coldest year in the Newark record of sixty one years. Not only did each of its months average several degrees below normal in the shorter record of the thirteen years that the present bureau has existed, but the same fact holds true of ten of its months when the long record is brought into consideration. The two remaining months are May and September, which have temperatures that are only slightly below the normals of the same months in the record beginning in 1843. These facts are clearly revealed in the following table:

Average temperatures by months in Fahrenheit degrees:

Month.	Period 1843-1892.	Period 1892-1904.	Year 1904.	Degrees lower than record of 1892-1904.
January...	29.1	29.7	21.8	7.9
February...	30.5	28.8	23.9	4.9
March...	37.8	39.0	35.4	3.6
April...	48.7	49.5	45.7	3.8
May...	59.2	64.2	62.6	1.6
June...	68.7	69.5	68.7	.8
July	74.2	74.4	72.3	2.1
August..	71.8	72.8	70.7	2.1
September	64.5	66.3	64.8	1.5
October..	53.4	54.9	51.2	3.7
November	42.8	43.5	39.8	3.7
December.	32.8	33.2	25.0	8.2
Average..	51.1	52.1	48.4	

It will be noticed that the greatest differences occurred at the beginning and the ending of the year. The first four months of 1904 closed the severest Winter on record, and the last few mark the beginning of a season that threatens to be

even colder than its predecessor. As to extremes, it is scarcely necessary to state that we need not look for record-breaking high temperatures in 1904. January's 10 below zero, occurring on both the 5th and 10th, marks the lowest point reached in our period of observation. That of 12 degrees below zero, in 1866, therefore, still stands as Newark's minimum record temperature. There were thirty days on which the mercury fell below 32 degrees. February was a cold month. But it is five years since the mercury during this month went perceptibly below the zero point. On twenty-seven days the temperature was below 32 degrees. March had twenty-five cold days, but not one of them approached the low record of 5 degrees above zero, made in 1900. The Winter's cold extended into April, which, with its eight days of temperature below 32 degrees, is the coldest Spring month recorded in our books. June's hottest day exhibits a temperature of 93 degrees, but the mercury went above 90 degrees only twice. The record established for June is 98½ degrees, in 1901. July also had only two days with records of 90 degrees, or above, and its highest point was 94 degrees. In 1901, the second day of the month, the highest mark of Newark's temperature was reached, namely, 102½ degrees. August was unusually cool, the mercury never ascending above 86 degrees. There are several years in our short record when a temperature of 97 degrees was recorded. September's highest mark was the same as August's, although September in Newark is often a hot month. October was cool, and, in fact, it ushered in the cold weather of the Winter with the remarkable number of four days of freezing temperature. November continued cold, and December's record-breaking cold is still too fresh in our recollection to require the emphasis of especial comment. In the entire month there has not been one day when the mercury remained above the freezing point. The month's lowest temperature was 4 degrees, which is only two higher than the record low for December, made in 1896.

What the remaining Winter months have in store for us is entirely a matter of conjecture—fit topics for the weather-wise clerks whose prognostications fill the pages of the almanacs for the new year. The experience of the past year has certainly prepared us for any kind of weather that nature may have in store for us.

CLOUD, SUNSHINE AND RAIN.

"If one counts cloud and sunshine thro' the year
He'll find the total less of foul than fair."

Thus one may freely translate a famous couplet of Cæcil. The truth of the poet's remark is borne out by the figures of our next table.

Character of days, 1904:

Month.	Clear.	Partly Cloudy.	Cloudy.	Days of Precipitation.
January.....	13	8	10	10
February.....	15	9	5	8
March.....	9	12	10	13
April. . .	8	15	7	12
May. . .	14	12	5	9
June. . .	12	12	6	16
July. . . .	12	9	10	15
August.....	15	9	7	12
September .	12	9	9	6
October . .	17	10	4	9
November.	13	11	6	9
December. .	8	10	13	11
Totals. . .	148	126	92	130

One hundred and thirty days on which rain or snow fell in measurable quantity is about the usual average. However, there have been fewer cloudy days than usual, notwithstanding "latest impressions," (for December was marked with less sunshine than is usual). On the other

hand, many other months stand in sharp contrast, being credited with an abundance of bright, sunny days.

Table of precipitation, in inches:

Month.	Average of 1843-1892 period.	Average, 1892-1904	Total, 1904 (rain and melted snow).	*Total Snow.
January.	3.65	3.48	3.27	15.9
February	3.60	4.26	2.67	5.5
March	3.81	4.72	3.56	7.3
April	3.53	3.49	4.71	
May.	3.97	3.94	2.93	
June	3.57	4.12	3.00	
July	4.28	5.76	5.36	
August	5.07	5.74	7.46	
September	3.75	3.26	4.19	
October	3.58	4.65	4.16	
November	3.63	3.55	1.85	0.2
December.....	3.63	3.77	2.87	24.8
Totals.....	46.3	49.2	46.0	53.7

*Ten inches of snow will average one inch when melted.

It will be seen from this table that July and August maintain their reputation as the wettest months. April and September, or mainly our driest months, yield their places to February and November. No floods have marked the year. The total precipitation stands in marked contrast to 1903's record breaking total of 67.3 inches.

Our daily observations include four tests of the atmosphere's humidity. It may interest the reader to know that monthly humidity averages, which are derived from the daily averages, have been unusually high, all save three being above the 70 per cent mark, which the result of continued observation has fixed as normal.

HUMIDITY AVERAGES

January.....	80	per cent.
February.....	79	"
March.....	74	"
Apr.....	63	"
May.....	63	"
June.....	71	"
July.....	73	"
August.....	70	"
September.....	75	"
October.....	67	"
November.....	72	"
December.....	78	"

The determination of sunshine duration is not an easy matter. The accompanying figures are based, not on instrument records, but on the results of four observations each day; and the figures signify the percentage of time the sun actually shone during the hours in which it is scheduled to shine:

January....	47
February.....	61
March.....	50
April.....	54
May.....	72
June.....	68
July.....	54
August.....	62
September.....	62
October.....	74
November.....	60
December.....	37

These percentages are lower than usual.

The barometer has had a busy time of it. Perhaps never before have its fluctuations been so numerous or so excessive. The highest reading taken was 30.054 inches, at 11 A. M., March 5; and the lowest, 28.84 inches, during the night of November 13. Fortunately, so wide a range rarely occurs within twenty-four hours. Still there have been great variations of pressure within remarkably short periods. Such fluctuations not only bring on sudden temperature changes, they also cause considerable discomfort to such as are possessed of weak lungs.

BAROMETRIC LEVELS.

(IN INCHES.)

Month.	Average.	Highest.	Lowest.	Range.
January....	30.188	30.87	29.70	1.17
February....	30.270	30.64	29.53	1.11
March.....	30.090	30.95	29.50	1.45
April.....	30.000	30.44	29.66	0.78
May.....	30.020	30.40	29.73	0.67
June.....	30.057	30.36	29.70	0.66
July.....	30.020	30.20	29.70	0.50
August.....	30.080	30.40	29.87	0.53
September....	30.119	30.61	29.66	0.95
October.....	30.020	30.30	29.40	0.90
November.....	29.880	30.37	28.84	1.48
December.....	30.060	30.45	29.46	0.99

The months of greatest range are January, February, March, November and December. It is worth noticing that ten months had an average pressure in excess of 30.00 inches—which is considered the normal pressure. This is an indication also of low temperature.

WINDS.

The recovery of the barometric level after a severe storm is invariably associated with increased severity of atmospheric movements. It is on these occasions that winds blow hardest. Technically, a wind whose velocity is thirty miles an hour is a "high wind," one whose rate is forty miles is a "very high wind;" a fifty-mile gait merits the dignity of "storm;" a sixty mile blow is designated a "great storm," and eighty miles an hour means "hurricane." If we employ this standard scale we may say that the year has been free from hurricanes. Great storms visited this city only twice—once in March and again in September—while thirteen times "high winds" have left their autographs upon the anemometer.

HOLIDAYS.

A review of the weather of the holidays in 1904 may strengthen the memory. New Year's Day was fair and mild, snow covered the ground to the depth of two inches, and Branch Brook lake was open for lovers of skating for the ninth day of that Winter season. Lincoln's Birthday was clear and cold. Skaters enjoyed their forty-fourth day on Branch Brook lake, but all snow had disappeared. Washington's Birthday was wet and warm. A heavy rain washed away all traces of the big snow that had fallen a few days before. It was a typical 'thaw'. Cold weather set in again a few days later, and skating on Branch Brook lake continued to its fifty-fourth day on the 27th of the month. Memorial Day was marked by heavy rain in the afternoon, which was preceded by a warm and humid morning. The sun never shone brighter on a Fourth of July than it did this year. The sky was without clouds all day and the temperature was moderate. Labor Day was fair and cool. Election day was clear until near midnight, when rain descended to cool the ardor of the winning patriots. (By that hour only the winners could be found out of doors.) Thanksgiving Day was fine for a November day. There was neither rain nor snow, and the mercury in the thermometer remained quite stationary at the 43 degree mark. Christmas Day saw no sun, but the eyes of our citizens, more especially our younger citizens, were gladdened by the sight of a good "old-fashioned" snow storm. Not that snow was needed! A layer whose depth must have been fully two inches already covered the ground when in the early morning the silent flakes began to do their work.

SUMMARY.

In scanning my record of the year I find a few comments of a miscellaneous nature that may be worth repeating. On March 15 Branch Brook lake was still full of ice;

it had all vanished by the 21st. Early signs of Spring were noted in the suburbs by the 24th of the month. On the 31st frost was still in the ground, but not near the surface. At a depth of one foot falling two feet of frozen earth. By April 1 there had been 128 days of the Winter and the mercury had fallen to 32 degrees and under fifty-four days when it had not gone above that point, eighty-eight days when the average temperature was not above it. Frost was noted as late as the morning of April 23, the day after Arbor Day. May, June and July were their usual periods for thunder storms, but August was almost entirely free of them.

The first frost of Autumn was not anticipated by Uncle Sam's forecasts. It came unannounced in the morning of September 22. Ice was formed in exposed places of the city's suburbs on the same morning. Not a point below freezing point was recorded within the city limits until Friday, October 7. Thereafter frosts came thick and fast. Fires were started in hearth-places by the gas-burners by the 20th. October's minimum temperature was 27 degrees and it was noted on the 27th day. There was no skating on Branch Brook lake during the present season until two days ago. Good ice for skating has attracted Newarkers on other local ponds as early as December 3. Skating began at Verona lake and at Statens lake (near Eagle Rock) on December 7. Skating has been going on within the city limits since the 13th. December has seen twenty-five inches of snow, all of which fell before the 26th, and most of which disappeared in a great "thawing" on the 27th. This date also witnessed the month's first rainfall.

CONCLUSION.

In conclusion, we may be permitted a word concerning the weather forecasts that have emanated from official sources. Newarkers are fortunate in having a choice of two daily forecasts, the one coming from the district New York city bureau, the other (a long-range forecast) from

Washington. During the year just past those coming from the capital have proved to be correct oftener than the other, although the high standard of excellence attained in previous years has not been reached during the past twelve months. However, few, if any, storms or temperature changes have reached us unannounced, although it has more than once happened that predicted weather changes have not "eventuated." Whatever error there may have been has usually happened on the "safe side." The American citizen need, therefore, not lose confidence in the prognostications of the Weather Bureau. Happily, he is not yet reduced to the extremity where he is forced to fall back upon the advice contained in the old French proverb. "*S' il fait beau, prends ton manteau; s'il pleut, prends le si tu veux*" (which may be translated: "If it is clear weather, carry your raincoat; but if it rains, take it or not, as you please.") There still is much in our local weather to awaken the spirit of thankfulness, notwithstanding the "strenuosity" of the year just passed.

GEORGE C. SONN.

AREA OF CITY AND EXTENT OF PUBLIC IMPROVEMENTS

Census Population, 1900	240,070
Estimated Population, 1904	272,000
Total area of the City's square miles	22
Built up square miles	15 1-2
Meadow land, square miles	6 1-2
Length of River and Bay front, miles	10 5-10
Number of miles of granite block	48.77
" " " trap block	12.22
" " " telford pavement	19.22
" " " cobble stone pavement	9.28
" " " asphalt pavement	51.10
" " " brick pavement	11.55
Total length of paved streets, miles	154.16
Number of miles of unpaved streets	87.78
Length of Electric Railways, miles	93.89
Length of Steam Railways,	25.00
Length of brick sewers, miles	69.02
Length of pipe sewers, miles	117.33
Length of private sewers, miles	25.41
Total length of sewers, miles	211.67
Total number of sewer basins	3,056
Length of water mains, miles	308.00
Average daily consumption of water, gallons	35,532,079
Capacity of water supplied per day, gallons	50,000,000
Number of buildings	33,829

PUBLIC PARKS

Military, acres	6.45
Washington, acres	3.40
Lincoln, acres	4.37

NEW PARKS

Branch Brook, acres	277.5
East Side, acres	12.5
West Side, acres	23
Weequahic Reservation, acres	265.08

Allow me, in conclusion, to express my sincere thanks to the members of the Board of Health, individually, for their kind co-operation and many courtesies extended to me in the performance of my duties.

I wish also to thank the employees in general for the willing and efficient manner in which they performed their duties.

Very respectfully,

DAVID D. CHANDLER,

Health Officer.

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